International Organization for Migration

Improved Shelters for Responding to Floods in Pakistan

Phase 1: Study to Develop a Research Methodology

July 2014

IOM • OIM

UKaid
from the British people

ARUP

Acknowledgements

Arup International Development would like to thank IOM and DFID for their input in preparing this report and for organising the field visit. Particular thanks are due to Magnus Wolfe Murray (DFID), and the Shelter Cluster Team in Pakistan.

This report and associated publications were commissioned and produced using funding from DFID. However, the views expressed are those of the independent academic authors and do not necessarily reflect the views of DFID and IOM.

Contents

Contents

Tables

Figures

Appendices

Acronyms

ACTED	Agency for Technical Cooperation and Development
CRS	Catholic Relief Services
CESVI	Cooperazione e Sviluppo (Cooperation and Development)
DFID	Department for International Development (UK)
DRR	Disaster Risk Reduction
HANDS	Health and Nutrition Development Society
IGO	Intergovernmental Organization
IOM	International Organization for Migration
INGO	International Non-Governmental Organization
NDMA	National Disaster Management Authority
NFI	Non-Food Items (e.g. clothing, blankets, bedding materials, etc.)
NGO	Non-Governmental Organization
ORS	One Room Shelter
PDMA	Provincial Disaster Management Authority
TKF	Tameer-e-Khalaq Foundation
T-Shelter	Transitional Shelter
UN-Habitat	United Nations Human Settlements Programme
UNHCR	United Nations High Commissioner for Refugees

Executive Summary

For three years in a row, 2010-2012, extreme flooding occurred in southern Pakistan which caused widespread devastation and resulted in more than 2.5 million houses being destroyed. The magnitude and frequency of these flood events and the large numbers of people affected, has highlighted the limitations in the capacity and resources of humanitarian agencies to support recovery. Given the likelihood of increased flood risk and limited humanitarian funding in the future, it is imperative to focus on building the capacity of communities living in flood-prone areas to build flood-resilient shelters.

This study draws together existing information on flood-resilient shelters in order to identify key criteria that shelter partners and government can use to inform and assess the design of flood-resilient housing in southern Pakistan. It has generated four outputs: an Excel database and maps which provide an overview of the shelter response 2010-2012 (output 1 and 2); valid and reliable metrics for assessing shelter designs (output 3); and a proposal for further research to be undertaken in Phase II (output 4). Phase II will provide a scientifically and academically robust basis for assessing and comparing shelters constructed in southern Pakistan, resulting in an evidence-based construction guide informed by best practice that can be used by policy makers, operational agencies and local builders.

The approach follows a standard research methodology comprising a literature review; a review of shelter programme documentation and guidelines; and fieldwork which included visiting 20 communities that received shelter assistance, as well as consultation with key stakeholders.

There is limited academic literature on flood-resilient shelters which reinforces the need for further research in this area. Several sources of literature supported action at a household level to enhance the flood-resilience of individual shelters to small-medium flood events, and there is precedent in Bangladesh for adapting vernacular construction to enhance flood-resilience. Existing shelter assessment frameworks and tools do not consider flood-resilience as they are either too generic or specific. Damage assessments and case studies of shelters constructed following flood events are used to inform best practice and identify incremental improvements.

Five different types of shelter have been constructed in southern Pakistan since 2010: mud, adobe, lok kaat, burnt brick and cement block. Following the 2010 floods, humanitarian agencies typically re-constructed houses in concrete block or burnt brick as it was considered more durable. Subsequently, awareness that flooding was becoming an annual event, and limitations in funding, have led to increasing emphasis being placed on low-cost vernacular solutions that incorporate flood-resistant features.

The desk study generated a preliminary list of 45 indicators relevant to flood-resilient shelter. These have been progressively

reviewed and refined based on the findings from the fieldwork and feedback from IOM and the Shelter Cluster, resulting in 14 indicators that relate specifically to the shelter design in southern Pakistan. These relate to three key performance criteria:

Safety and Resilience: to what extent a shelter reduces vulnerability to future flood hazards and contributes to community resilience;

Acceptability: to what extent a shelter design is culturally appropriate and suitable for day to day living;

Sustainability: to what extent the choice of construction method has a wider positive and negative impact (socio/economic and environmental).

Valid and reliable metrics have been identified for each indicator to the extent that it is possible to do so based on this initial study. There are only a few cases where scientific/academic evidence exists, elsewhere further substantiation will be required. A research methodology for Phase II is proposed, which aims to validate the metrics based on academic and scientific evidence, and then use these to carry out a comparative assessment of the five shelter designs identified in this study resulting in an evidence-based construction guide for flood resilient shelter design in southern Pakistan.

Finally, it is recommended that local partner(s) participate in the next phase of research, and consideration is given to broadening the scope of research to include other hazards.

1 Introduction

For three years in a row, 2010-2012, extreme flooding has occurred in southern Pakistan which caused widespread devastation and resulted in more than 2.5 million houses being destroyed. Humanitarian agencies and donors carried out shelter programmes in response to these events which assisted in the re-construction of 100,000 houses. However, their capacity is dwarfed by the magnitude and frequency of these flood events, leaving many families without assistance. Given the likelihood of increased flood risk and limited humanitarian funding in the future, it is therefore imperative to focus on enabling communities living in flood-prone areas to build flood-resilient shelters.

This study draws together existing information on flood-resilient shelters in order to identify key criteria that shelter partners and government can use to inform and assess the design of flood-resilient housing in southern Pakistan. Its primary purpose has been to inform a methodology for further research that will provide a scientifically and academically robust basis for assessing and comparing shelters constructed in southern Pakistan. Ultimately, this study will contribute to an evidence-based construction guide informed by best practice that can be used by policy makers, operational agencies and local builders.

The overall approach to this study is described in section 2. The key findings from the desk study and fieldwork are summarised in sections 3-5. Section 6 discusses how the criteria, indicators and metrics for assessing shelter solutions have evolved in the course of this study. A research methodology to substantiate these metrics, and carry out a comparative assessment of shelter designs to inform construction guidelines is provided in section 7. The report concludes in section 8 with observations and recommendations relevant to further work on this topic.

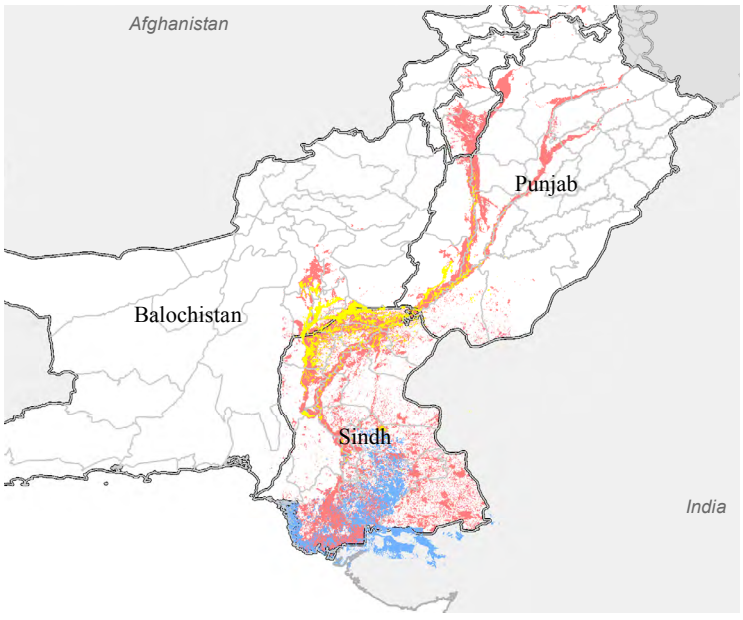


Figure A

The extent of floodwaters in 2010, 2011 and 2012

2
Methodology

2.1 Scope

This study was carried out by Arup International Development (Arup) on behalf of the International Organization for Migration (IOM), who lead the Shelter Cluster in Pakistan and the Department for International Development (DFID). It was completed over a 12 week period from 24 September - 13 December 2013. It relates to the area of southern Pakistan comprising upper and lower Sindh, southern Punjab, and a small portion of eastern Balochistan.

The focus of this study is how the design of shelter using vernacular forms of construction can improve the flood-resilience of communities to small-medium scale flood events, such as occurred in 2011 and 2012.This includes preventing damage caused by heavy rain which can wash away walls and weaken structures. Location, settlement planning and infrastructure also play a critical role in reducing vulnerability to most flood events but are outside the scope of this study. Likewise, reducing vulnerability to extreme flood events, such as occurred in 2010. This requires regional flood risk management strategies and land-use planning that is informed by hydrological modelling, and an understanding of changing weather patterns.

Southern Pakistan is also at risk from low-medium seismic hazards, as evidenced by the earthquake in Baluchistan in September 2013, whilst tsunami and cyclone hazards are relevant in coastal zones. Consideration of these hazards falls outside the scope of this study, but is nonetheless critical to the design of safe and resilient shelter in this region of Pakistan. See Appendix A.

2.2 Approach

This study adopted a standard research methodology in response to the key research questions (see Box 1), in order to generate four outputs: a map and database of shelter responses (outputs 1 and 2), key shelter assessment criteria (output 3), and a proposal for further research (phase II) leading to evidence-based construction guidelines[1].

Box 1 - Key Research Questions

1. What are the different kinds of shelter designs deployed in response to the 2010 and 2011 floods in Pakistan?
2. How can we usefully measure the capacity of a shelter to withstand flooding?
3. To what degree, and with what level of confidence, can we assess existing shelter designs using a scientifically and academically robust methodology?
4. What methods could be used to generate scientific evidence for the metrics that we don't have data for (e.g. environmental impact)?
5. How could we synthesise the findings of these studies to develop a model shelter design that could be deployed in future flood responses or to prevent further loss of housing assets in anticipation of future flooding?
6. How can this study include the analysis of efficient vernacular flood resistant construction solutions?

[1] Ref: Terms of Reference for Developing a Research Proposal for Improved Shelters for Responding to Floods in Pakistan – dated 12th December 2012.

2.2.1 Desk Study

An initial literature review set this research within a global context (section 3). Its primary purpose was to identify examples of flood-resistant features, particularly relating to vernacular construction. Secondly, to explore how the flood-resilience of shelter is assessed. Relevant literature was identified based on the research questions and keyword searches using Google Scholar, Shelter Centre Library and the internet (Google) in addition to our knowledge of existing papers, guidelines and frameworks. Seventeen documents relating to flood-resilience and shelters comprising academic papers and 'grey' literature were reviewed, as well as twelve frameworks or guidelines that have been used to design and/or assess shelter programmes.

A review of shelter programme documentation and guidelines was carried out based on information obtained from IOM, and through contacting agencies directly (see section 4). This was based on a total of 767 documents (including reports, guidelines, drawings and specifications) relating to the shelter programmes implemented by 10 humanitarian agencies in response to the flood events since October 2010. See Appendix B1. This information was compiled in an Excel database, see Appendix B2, and on maps which provide an overview of the shelter response (outputs 1 and 2).

The secondary data collected through the desk study was used to identify the different types of shelter that have been constructed in southern Pakistan since 2010, different approaches to measuring the capacity of shelter to withstand flooding, and the factors that different stakeholders consider important in designing and evaluating flood-resilient shelter.

2.2.2 Fieldwork

A two-week field visit to Pakistan was carried out 18-30 November 2013, in order to test, verify, and refine the findings from the desk study (see section 5). The fieldwork team visited 20 communities in Sindh province which had received shelter assistance since October 2010 from 10 humanitarian agencies (Figure 2). This was not a statistically representative sample, nevertheless was deemed sufficient for this scoping study. It provided an opportunity to directly observe the types of shelters that were constructed and carry out consultations with homeowners.

Consultations (semi-structured interviews) were also carried out with humanitarian agencies, implementation partners, and government representatives in order to answer the following key questions.

- What are the key criteria relating to flood-resilient shelter that should be measured from the perspective of the different stakeholder groups?
- How do we best frame the issue of acceptability and cultural value (quality and performance objective) based on discussion with beneficiaries?
- What environmental impact and socio-economic factors should be considered?

Further details of the fieldwork are provided in Appendix C.

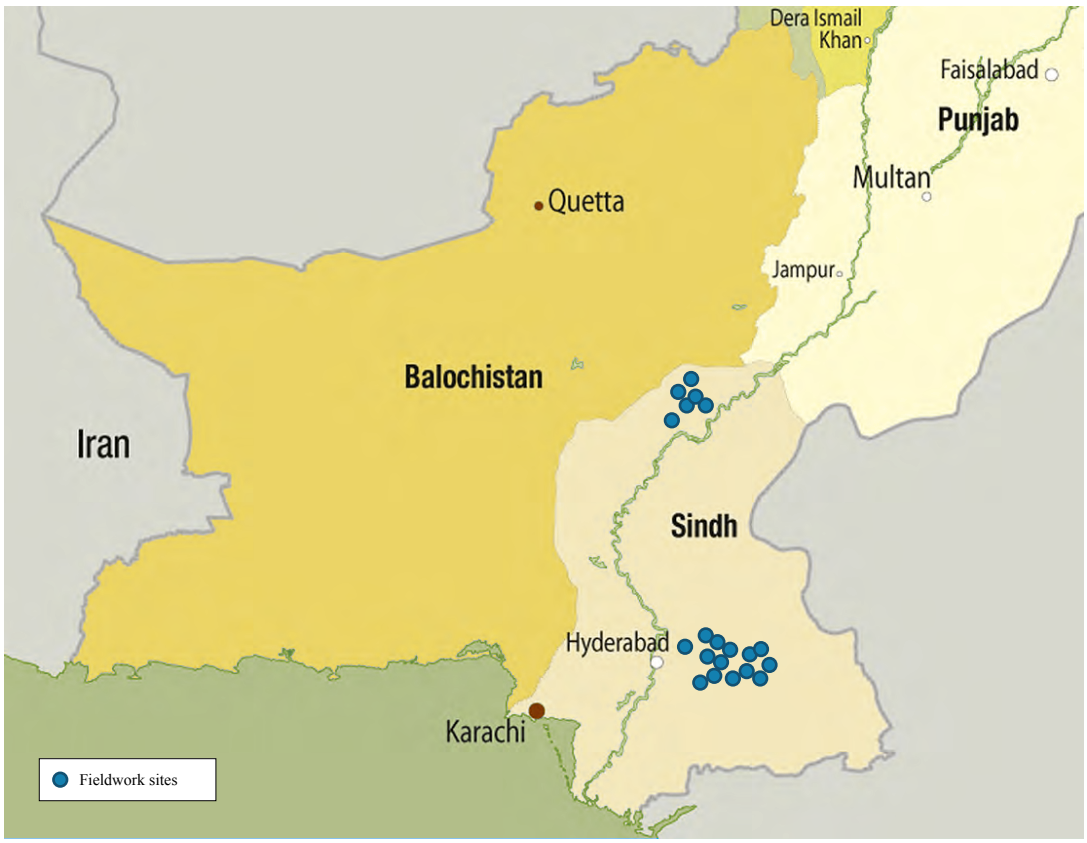


Figure B Map of fieldwork showing communities visited in November 2013

2.2.3 Analysis

Data obtained from the desk study was used to develop a preliminary list of key criteria, indicators and possible metrics. This was then refined as a result of the fieldwork. A high level qualitative analysis of four types of shelters was then used to explore how these criteria and indicators might be used to assess the strengths and weaknesses of different shelter typologies. Further review and analysis, incorporating feedback received from IOM, resulted a final set of criteria and indicators (see section 6). Variables and metrics for each of these indicators were identified based on existing shelter guidelines and programme documentation (including damage assessments), and consultation with key experts within Arup. Further details are provided in Appendix D.

2.2.4 Design

The information obtained in this study was used to design a research methodology to substantiate the metrics based on academic and scientifically robust evidence, and use these to assess the strengths and weakness of existing shelter typologies, in order to inform a best practice guide for the design and construction of flood-resilient shelters in the flood-prone regions of southern Pakistan (see section 7).


AP

3
Literature Review

This section summarises the key findings from the literature review. Its primary purpose was to identify examples of flood-resilient features, particularly relating to vernacular construction. Secondly, to explore how the flood-resilience of shelter is assessed globally.

3.1 Flood-Resilient Shelter

There is limited academic literature relating to flood-resilient shelter which reinforces the need for further research in this area. Of the 17 sources reviewed, only one can be considered an academically peer-reviewed paper (Wadley 2012). One paper was published on behalf of the Federal Emergency Management Agency of the United States (FEMA 2012), 11 originated from the humanitarian agencies, while the remainder comprised articles written by academics (Choudhury 1996, Alam 2000, Shaw and Ahmed n.d., Golz 2013).

Most of the literature relates to specific flood events, the majority in South and South East Asia (ALNAP 2008, ISDR 2008, UN-Habitat 2010, Shaw and Ahmed, n.d., HfHI 2012). These include lessons learned as a result of shelter projects carried out following the Indian Ocean tsunami in 2004 (Shaw and Ahmed, n.d.). Literature originating in Bangladesh, which has experienced regular flooding for several decades, includes examples of flood-resilient vernacular construction (Choudhury 1996, UNCHS 1998, Alam 2000, ADPC 2005). Evidence following recent flood events in Europe (Golz et al. 2013), and Hurricanes Katrina and Isaac in the United States (FEMA 2012), provides insight into how flood-resilience can be measured.

Selecting an appropriate location for a shelter on the basis of flood risk mapping, zoning and land-use planning is considered to be the first step toward ensuring a community builds in safe areas (Wadley 2012). Settlement planning incorporating site infrastructure, such as drainage channels and retaining walls, can significantly reduce the impact of flooding (IFRC 2011). Whilst examples from Bangladesh (Alam 2000), Japan (ISDR 2008) and more recently Europe (Golz 2013) demonstrate that enhancing the performance of individual shelters is beneficial for small-medium flood events.

Shaw and Ahmed highlight the importance of enhancing local construction practices based on an understanding of their strengths and weaknesses, so that non-engineered community-built structures can withstand flooding. In Bangladesh, vernacular construction methods have been adapted to enhance flood resistance for several decades (Choudhury 1996, Alam 2000, ADPC 2005). Examples of low-cost flood resistant features include raised plinths, stilts, and water resistant veneers (see Table 1 Flood-resistant features identified).

The impact of flooding on shelters and the type of damage that occurs relates to the scale and type of flood event, the level of exposure, and the shelter's construction. In Bangladesh, flood damage is primarily a direct consequence of uplift due to soil saturation, or horizontal forces from waves, surges and/or currents. Damage may also occur due to high winds, lightning, slope instability, and ground settlement. The impact on different parts of the building (foundations, walls, and roofs) depends on the depth and duration of flooding, and the type of building (ADPC 2005). In the US, the majority of flood damage is to residential buildings in coastal areas; due to wave-strike, storm surge, flood-borne

Source	DRR features
Choudhury, 1996	Raising plinth, stilts, and floating structures and retrofitting DRR to existing structures through: veneer, vertical corner reinforcements, tie beams, and buttresses
ADPC 2005	Plinths, posts, walls, and roofing
ALNAP 2008	Materials selection, basic service provision (schools, clinics, etc.), owner-driven approach, long-term planning important, and community understanding of vulnerabilities
CRS 2010	Raised concrete-coated earth mounds (plinths), improved foundations, incorporating chicken wire in walls
UN-Habitat 2012	Foundations, durability, roof pitch
Wadley 2012	Local implementation of DRR measures by communities. Soft DRR features include: risk mapping, disaster planning, community training programmes on management and maintenance of shelter, early warning systems, weather forecasting, improved water management and flood control, and restoration of wetlands/mangroves/other natural ecosystems
IFRC 2011	Siting and location, foundation, walls and roof

Table 1 Flood resistant features identified

debris and slow-rising water (FEMA 2012). Understanding the type of damage that can occur provides an insight into the physical testing of structures and materials that may be necessary to demonstrate flood-resistance.

3.2 Shelter Assessment

Globally, there is precedent for assessing the performance of shelter in order to promote flood-resilience. In Europe, performance measurements are carried out by academics and government agencies with a mandate to ensure flood protection in order to inform the development of policy and building standards that minimise flood damage, decrease flood repair costs, and allow for fast re-occupation (FEMA 2012, Golz et al. 2013). In emerging economies flood resilience aims to reduce risk, minimise damage and loss of property, and save lives (Alam 2000). However, in this context, it is generally NGO's, donors, or academics that are concerned with assessing the performance of shelters in order to inform the design and implementation of future shelter programmes (UNCHR 1998, DFID 2011 and Wadley 2012). Over the last decade increasing emphasis has been placed on improving the abilities of house-owners, local masons, and small contractors to improve the quality of non-engineered buildings (ADPC, 2005).

Various assessments of shelter programmes, carried out by humanitarian agencies in response to flooding, exist as case studies (ALNAP 2008, ISDR 2008, HfHI 2012, UN-Habitat 2012). These identify strengths and weaknesses based on lessons learned rather than scientific evidence. They tend to focus on how the process can improve flood-resilience (e.g. whether the programme includes community hazard mapping); rather than the product (e.g. whether flood-resistant features have been incorporated). Damage assessments generate empirical evidence of how shelters have performed in a flood event which provides a more robust basis on which to make recommendations for improving shelter design and construction (UNCHR 1998, ADPC 2005, FEMA 2012, Heritage Foundation 2011). In Europe Golz et al. (2013) are going a step

further by pioneering a scientific testing method to determine the financial impacts of flood resilient technologies which use sophisticated flood damage simulation modelling which is informed by structural and material testing.

The development of shelter is a complex sector and indicators required are highly context dependent (Nordlie 2013). It is therefore not surprising that the literature review did not identify any existing assessment tools that are directly relevant to One Room Shelters (ORS) in southern Pakistan. Notably, the majority of assessment frameworks and tools are used to evaluate programmes, rather than to promote best practice during design and implementation of shelter programmes. They tend to be either very specific, providing an in-depth understanding of a particular issue, such as economic efficiency/effectiveness (DFID 2011) or disaster risk reduction (Moring 2013). Others are very generic in order to be applicable to a wide range of programme types and contexts (ODI 2006). For example, ASPIRE (2006) provides a wide-ranging but comprehensive sustainability assessment based on 20 indicators; but only one indicator relates directly to reducing vulnerability.

The eight shelter guidelines reviewed provide more specific guidance and standards for planning, design and construction of shelter programmes. A few include information on material specifications and generic best practice details to ensure safe construction (Corsellis 2005, IFRC 2011). The majority highlight the importance of the affected population actively participating in re-construction in order to reduce future vulnerability (Sphere Project 2004, IFRC 2011, da Silva 2010).

4
Documentation Review

This section summarises the key findings from a review of programme documentation (including reports, guidelines, drawings and specifications) relating to the shelter programmes implemented by humanitarian agencies since October 2010.

This information was compiled in an Excel database, see Appendix B, and on maps which provide an overview of the shelter response (outputs 1 and 2).

4.1 Overview 2010 - 2012

The floods in 2010 were an extreme event, caused by cloud bursts mixed with seasonal snow melt in the mountainous northern areas of Pakistan. This led to riverine flooding that affected the entire Indus River valley, with standing water in places over 8ft destroying or damaging over 1.7million homes (DEC, 2012). The flooding in 2011 and 2012 was less severe, but representative of the type of flood events that occur almost annually. In 2011, heavy cloud bursts over the flat lands of southern Sindh which overwhelmed the existing drainage canals and led to ponding with standing water of 3-4ft. The following year heavy cloud bursts over the equally flat northern Sindh and southern Punjab also resulted in standing water of 3-4ft which remained for several weeks until it evaporated or was pumped out.

The humanitarian response organised following the 2010 floods was by far the largest international effort over the 3 years. This reflected the large number of people affected; approximately 20 million people across the country. The floods of 2011 and 2012 were more localised, affecting approximately 5 million people each. The high levels of vulnerability amongst the displaced population and the possibility of future flooding necessitated a flexible and cost effective shelter strategy. The One Room Shelter (ORS) strategy proposed by the Pakistan Shelter Cluster and endorsed by the Pakistan Government was intended to encourage families to return to their original location by providing families with a durable flood resistant solution in-situ. This was deemed preferable to transitional shelters which have a limited lifespan. It was envisaged that ORSs would be built from indigenous materials using local construction techniques, and could be extended or upgraded in future (Shelter Cluster Pakistan, 2010).

4.2 Shelter Typologies

Since 2010 over 170,000 shelters have been constructed by 169 NGOs, INGOs, and IGOs. The main Organizations building ORSs were; UN-Habitat, Qatar Charity, UNHCR, HANDS, ACTED, IOM, Concern, CESVI, TKF and CRS. The vast majority of the shelters provided as part of the flood response programme from 2010 to 2012 were ORS. Both UN-Habitat and ACTED also provided transitional shelters in some locations, for instance where families were unable to return home.

The desk study identified 5 key shelter construction typologies, as shown in Table 2. The term katcha when used to describe vernacular architecture refers to shelter typically built from mud, adobe or loh kaat, whereas the term pucca refers to a shelter (or house) built with concrete brick, stone, or burnt brick.

Shelter Typology	Description		
Mud	Layered mud construction		IOM
Adobe	Sun-dried mud brick construction		Concern © Concern
Loh kaat	Timber/bamboo frame, bamboo/ grass matted walls with mud rendering		ACTED
Burnt Brick	Masonry using charcoal fired bricks		TFK
Concrete Block	Masonry using cement bricks/ block		UN-Habitat © UN-Habitat

Table 2 One Room Shelter Typologies built in southern Pakistan

Although most of the houses damaged by the 2010 floods were mud and adobe brick houses (katcha), the majority of Organizations (including the provincial government) built concrete and burnt brick (pucca) houses as they were thought to be more durable (UN-Habitat, 2012). This led to a severe shortage of burnt brick in the local market, and concerns about the environmental impact and use of child labour in the brick kilns.

Although the flood events in 2011 and 2012 were much less severe than in 2010, the shelter needs were still significant. Based on a growing awareness that flooding was becoming an annual event and limitations in funding, greater emphasis was placed on low-cost solutions which maximised beneficiary participation and improved flood-resilience. Most ORSs built in response to the 2010 floods were constructed by contractors or directly by the

humanitarian agencies. More community driven programmes were carried out in response to the 2011-2012, or included training of beneficiaries so that they had the skills to maintain and repair their shelters in the future. The shift towards lower technology, vernacular architecture is highlighted by the Heritage Foundation (Heritage Foundation, 2011).

4.3 Flood Resilient Features

Many of the Organizations implementing shelter programmes in southern Pakistan following the floods have produced guidance documents on how to design and build ORSs (Shelter Cluster Pakistan 2012). These show that flood resistant features have been progressively incorporated in the design and construction of ORSs since the 2010 response. Examples include: more durable foundations, elevated ground floor level, raised plinths, plastic sheet on the roof, and the use of burnt brick up to flood /window level. These measures respond to the types of damage to houses observed following the 2010 floods which was typified by undermined foundations, eroded walls due to being submerged in flood waters, and collapsed roofs.

Damage assessments carried out in 2012 indicate that the main damage to shelters built in Northern Sindh following the 2010 flood event were from the combined action of wind and rain which eroded roof layers and the external surfaces of walls (Pakistan Shelter Cluster, 2012). UN-Habitat proposed that cement mortar or plaster is used on the walls to increase their durability and water resistance (UN-Habitat 2010). Cement is expensive and the use of lime for weather proofing the roof and walls became more prevalent following the study carried out by the Heritage Foundation. Lime is readily available in southern Pakistan, much cheaper than cement and provides insulation keeping the houses cool (Heritage Foundation, 2011).

Other flood resistant features introduced included thicker, and hence stronger and more durable walls, a roof overhang to protect the walls from rain, and a ring beam to tie the top of the walls together and help spread point loads from the roof structure on the walls and lintels. See Table 3.

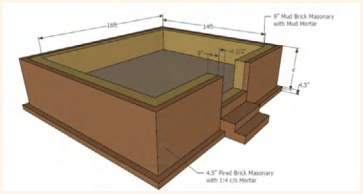
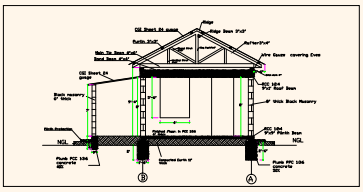
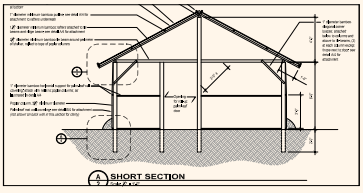
Building Element	Flood Resistant Feature	Photos	
Floor	Elevated ground Raised Floor Level		UN-Habitat
		 © Acted	ACTED, 2011
Foundation	Strengthened foundations (depth and width) Plinth Protection (materials and render)		HANDS - Thick plinth to protect foundations
			HANDS, 2011
Walls	Protection (materials, render, roof overhang, and damp proof course) Thickness Ring beam to support beams and tie roof together		IOM 2010 (double leaf adobe walls, with burnt brick up to sill level)
		 © GIZ	GIZ
Roof	Pitch (roof slope) and flat roofs with adequate slope to avoid stagnant water Protection (render, plastic sheets) Drainage Accessible roof	 © Heritage Foundation	Heritage Foundation
		 © CRS	CRS, 2011/12

Table 3 Flood Resistant Features identified though desk study

5
Fieldwork

This section summarises the key findings from the fieldwork. The purpose of the fieldwork was to observe shelters that had been constructed 2010-2012 and undertake consultation with key stakeholders in order to understand:

- What are the key criteria relating to flood-resilient shelter that should be measured from the perspective of the different stakeholder groups?
- How do we best frame the issue of acceptability and cultural value (quality and performance objective) based on discussion with beneficiaries?
- What environmental impact and socio-economic factors should be considered?

5.1 Flood-Resilience

Hazard assessments were not carried out at village, district, or provincial level as part of shelter programmes. Discussions with the PDMA and the NDMA suggested that strategies at the regional-scale to identify and mitigate flood risk do not yet exist.

Location is key to reducing flood risk, however families living in southern Pakistan have limited choice as to where they build shelters. Flood affected areas are consistently low-lying, and the choice of sites which reduce exposure is limited. Land tenure appears to have prevented implementation of site **infrastructure** works that could help mitigate the impacts of flooding, such as digging drainage ditches.

Landlords also influenced the **type of shelter** that was built. Some landlords favoured katcha because it was considered to be less permanent, whilst others preferred pucca houses as they were considered to be better quality. There is a perception among some homeowners, landlords, agencies and government representatives that brick shelters (pucca) are more desirable than vernacular options (katcha). Mostly, this is due to the **durability** of the building materials.

The quality of **materials and workmanship** varied significantly. This related to the availability of local skills and materials at the time they were constructed, and whether training had been provided for maintenance, repairs or modifications. Those with well-constructed walls, good quality materials, properly detailed openings and reasonable panel size are more likely to withstand submersion. Likewise, those with **flood-resilient features** included: roof overhangs, pitched roofs, plinths, plastering including the use of lime stabilized mud plaster and foundations seated well below ground level. Photographs illustrating these features are included in Appendix C.

5.2 Acceptability and Cultural Value

In southern Pakistan many rural dwellers are often engaged in tenant farming for landlords as their primary livelihood. At certain periods within the farming cycle they are required to spend significant amounts of time living in temporary shelters within the fields. During this time shelters are typically used to store the family possessions. Therefore lockable doors and windows that provide **security** are of considerable importance to households. One family also commented that mud shelters were not preferred as thieves were able to dig through the walls while the owners were away in the fields.

Adequate **space** was repeatedly raised as an issue by homeowners during the consultations. It was unclear whether this was due to perceptions that others may have received assistance to build larger shelters or the overall size of shelter. This was fairly consistent irrespective of family size, implementing Organization or whether it was an ORS or T-Shelter.

Privacy was also a key concern for residents. Specifically this relates to protection from observation from outside the shelter rather than within the shelter. This related to the height of doors and windows, the ability to close them and adjacency. Unlike Northern Pakistan, internal partitions were not considered important.

Vernacular typologies, such as mud and adobe with their thick walls (high thermal capacity) were noticeably cooler during the heat of the day than the burnt-brick houses. This was considered advantageous, whilst many households living in brick houses raised concerns about **temperature**.

The **participation** of homeowners and landlords in the design and construction, particularly the choice of construction method, was considered critical to the success of shelter programmes by ensuring the shelters were culturally appropriate.

5.3 Socio-Economic and Environmental Impact

Shelter programmes responded to humanitarian needs in the context of the ORS strategy, socio-economic and environmental impacts were given consideration by humanitarian agencies - notably through the promotion of vernacular construction technologies and reuse of salvage material but were not viewed as key priorities by humanitarian agencies.

There was awareness that deforestation and air pollution resulting from the use of brick kilns has a negative impact on the natural environment. However homeowners often reuse materials and some Organizations actively encourage the use of vernacular construction technologies and salvaged materials in the reconstruction of their shelters. Concerns were also raised over labour standards, notably the use of child labour in brick kilns.

Shelter programmes mostly used local materials, such as, timber, bamboo, mud and bricks which had a positive impact on the local supply chain, though also led to shortages and inflation.

6 Analysis

This section summarises the steps taken to establish valid and reliable metrics for the key criteria shelter partners and provincial Governments are looking to assess in a shelter design (Output 3).

6.1 Preliminary Criteria

The guidelines produced by the organizations implementing shelter programmes in southern Pakistan provided a rich source of information on which to base key criteria and indicators to assess flood-resilient shelter (Shelter Cluster Pakistan 2012, UN-Habitat 2010, UN-Habitat 2012, Heritage Foundation 2012). Some of the technical guidance also provides metrics based on lessons learned although this is likely to require further substantiation in the local context. The lessons learned from the 2010 response suggested that more consideration was needed to be given to the process rather than the product, and later guidelines include cultural appropriateness, socio-economic and environmental impact (Shelter Cluster Pakistan 2013). For instance, the Pakistan Shelter Cluster "Design Principles" (Shelter Cluster Pakistan 2012) provides indicators such as: climate suitability, layout, use of salvaged or locally available materials and familiar techniques.

Building on the key themes identified in the ToR (see Box 2), 45 indicators for assessing the strengths and weakness of flood-resilient shelter were identified as a result of the literature review, which relate to four key criteria:

- Reducing vulnerability to flooding through location, physical planning and design (da Silva 2010, IFRC 2011);
- Ensuring acceptability to homeowners through appropriate design and stakeholder engagement (Wadley 2012); also by considering habitability from a user-perspective with a primary focus on comfort; temperature, ventilation, space and vector control (Corsellis 2005, da Silva 2007, Almora 2010).
- Minimising environmental impact through an understanding of the planning intent and use of materials (Southasiadisasters 2007); and,
- Maximising socio-economic impact through a consideration of the total cost of the shelter (Almora 2010, IFRC 2011), the local supply chain (Sphere Project 2004, Almora 2010, CRS 2010, IFRC 2011) and the use of appropriate technology (ISDR 2008).

Further details are provided in Appendix D1.

Box 2 - Key issues identified in the Terms of Reference

Flood-resistant design
Climate proofing and wider resilience
Durability (wall, foundations, roofs)
Environmental impact
Market impact
Value for money
Local suitability

6.2 Revised Criteria and Indicators

As a result of the fieldwork the criteria and indicators were reviewed, resulting in a reduced list of 20 indicators that specifically relate to the context in southern Pakistan by incorporating the views of multiple

stakeholders (NDMA, PDMA, the Shelter Cluster, and implementing partners) as well as the perspective of shelter occupants. This refined list of criteria and indicators was presented and discussed at the Shelter Cluster meeting on Nov 29, 2013 in Islamabad, Pakistan.

The four categories remained the same but were re-ordered putting 'acceptability' ahead of 'reducing vulnerability'. Shelters need to be culturally appropriate and enable families carry out their day to day activities as well as reduce their vulnerability to flooding.

Several indicators have been omitted as they were not considered directly relevant to the design and construction of shelters. For example, site location, physical planning, land tenure which all play a role in reducing vulnerability and should be key considerations in designing shelter programmes, though not in the design of the shelters themselves. The fieldwork enabled a distinction to be made between indicators that relate to programme delivery (process) versus the output of the programme i.e. a shelter (product). Also to identify qualitative and/ or quantitative metrics that could be used to measure performance.

Further details are provided in Appendix D2.

6.3 Testing

A high level qualitative analysis of four types of shelter was used to explore how these criteria and indicators might be used to assess the strengths and weaknesses of different shelter typologies. One individual shelter of each type was picked at random from the fieldwork and assessed using the metrics in Appendix D2. Each indicator was scored from 0-5 (5 representing the highest scoring). The information was gathered through semi-structured interviews with the homeowners and implementing Organizations during the visits to each village.

Although indicative rather than representative, this analysis illustrates that there are trade-offs to be made in selection of a construction method and in designing shelters.

Further details are provided in Appendix D3.

6.4 Final Criteria and Indicators

Further reflection and rationalisation in response to feedback from IOM has resulted in a final set of 14 indicators (see Table 4). These focus specifically on the performance of a shelter, and the factors that are influenced though the design and / or construction choices. They relate to three key performance criteria:

- **Safety and Resilience:** to what extent a shelter reduces vulnerability to future flood hazards and contributes to community resilience;
- **Acceptability:** to what extent a shelter design is culturally appropriate and suitable for day to day living;
- **Sustainability:** to what extent the choice of construction method has a wider positive and negative impact (socio/economic and environmental).

A detailed description of each indicator illustrated by examples from the fieldwork is provided in Appendix D4.

Criteria	#	Indicators
Safe and Resilient	1	Base of Shelter
	2	Foundation
	3	Walls
	4	Roof
	5	Adaptability
Acceptability	6	Comfort
	7	Space
	8	Weatherproofing
	9	Protection
	10	Health & Safety
Sustainability	11	Cost
	12	Life Cycle Cost
	13	Local Supply Chain
	14	Resources

Table 4 Key Criteria and Indicators

6.5 Variables and Metrics

For each of the indicators, we have used information obtained from this study to propose variables and metrics that can be used to assess the benefits and disadvantages of different shelter designs. The variables describe what is measured, whilst the metrics define precisely how each variable is measured. These variables and metrics are valid and reliable to the extent that they have been utilized in this initial study. The validity of these variables and metrics are based upon the advice and review of Arup specialists. There are only a few cases where scientific/ academic evidence exists, elsewhere further substantiation will be required in Phase II.

Further information is included in Appendix D5.

7
Conclusions & Recommendations

This study has confirmed the need to generate evidence on the performance of vernacular shelter typologies to flooding, if vernacular construction that incorporates flood-resilient features is to be promoted by the Shelter Cluster and accepted by vulnerable communities as an appropriate means to address their vulnerability - at least for regular small-medium scale flood events.

It has resulted in key criteria and indicators that reflect the perspectives of multiple stakeholders, and proposes valid and reliable metrics for assessing shelter designs to the extent that this was possible based on a desk study and the fieldwork. Phase II provides an opportunity to progress this research, and we recommend that this is done in collaboration with one or more local partners so that the knowledge is retained locally. We also recommend that the scope is extended to take account of other hazards in the region. There is a risk that some flood-resilient approaches may be less appropriate in areas subject to high winds or seismicity.

This study has focussed on measures to improve flood resilience at a household level as means to improve community resilience. Further research is recommended to explore the flood mitigation measures that can be undertaken at a village/ settlement level, to reduce the impact of a small-scale flood event. This research could result in guidance on how to undertake site assessments to evaluate key risks and identify appropriate mitigation measures.

Finally, this study has brought together a significant amount of data resulting from shelter responses in southern Pakistan since October 2010. The resulting Database provides a valuable resource for further research. We recommend that it continues to be populated and is made accessible to members of the Shelter Cluster. We also suggest converting the GIS Maps into an interactive map which will allow the user to filter results.

8
Way Forward

This section provides a methodology for further research to be carried out in Phase II based on the findings of this study summarised in the previous sections.

8.1 Phase II Aims and Objectives

The overall aim of this research study aims to produce a "Construction Guide" for shelter in flood-prone areas in southern provinces of Pakistan. This research will focus on the areas of southern Pakistan that were severely affected by flooding in 2010-2012.

The specific objectives are:

- To substantiate the metrics developed for the 14 indicators during Phase I of this study.
- To analyse the shelters constructed in southern Pakistan since 2010 to identify the benefits and disadvantages of the different shelter designs using the key criteria and indicators established during Phase I.
- To capture the findings of the research to produce a Construction Guide (adaptable in to a training manual) that can be used by policy makers, operational agencies and builders that informs best practice in the planning, design, and implementation of flood resilient shelter design in southern Pakistan.

The focus area will be in southern Pakistan (Sindh, southern Punjab, and the Eastern portion of Baluchistan) and will relate to shelter programmes undertaken in response to flooding 2010-2012 that are included in the Database.

8.2 Approach

The credibility and sustainability of the Phase II research relies on;

- Obtaining a comprehensive data set and statistically representative sample size.
- Identifying one (or more) institution(s) to participate as a first step to developing a longer term relationship with the Shelter Cluster Pakistan and providing a local centre of knowledge that can continue to contribute to this agenda in the future
- A systematic and rigorous approach to data gathering and analysis to build an evidence base.
- A high quality output (Construction Guide) that responds to the needs and requirements of the proposed users.

8.3 Activities

The Phase II research will use the following methods to provide academic and scientific evidence based metrics (qualitative and quantitative).

- Data gathering
- Physical testing
- Building Analysis
- Socio-Economic Analysis

Each research method involves various activities to gather data for each of the three criteria identified during Phase I. These are mapped in Table 5.

A description of each activity and which of the 14 indicators developed during Phase I they relate to, is explained in Table 6.

Research Method	Activities		
	Safe and Resilient	**Acceptability**	**Sustainability**
Data Gathering	Structural Assessments	Beneficiary Consultation	Stakeholder Consultation
Physical Testing	Material Testing Full Scale Structural Testing		
Building Analysis	Structural Analysis	Dynamic thermal modelling Daylight Analysis Air quality analysis	
Socio-Economic Analysis			Analysis of BoQ Whole life cycle cost analysis Supply Chain Analysis

Table 5 Activities to be undertaken for each Research Method

Criteria	Activity	Indicator	Description
Safe and Resilient	Structural Assessments	1 Base of Shelter 2 Foundation 3 Walls 4 Roof 5 Adaptability	This will identify the long term performance of various shelter designs including their resistance to flooding and heavy rains. It will be important to understand from this assessment who built the shelter and whether it has been maintained and the impact this has on the structural performance. Furthermore it will provide information on the impact of modifications on the structural integrity of incremental upgrades and adaptations undertaken by beneficiaries to different shelter designs.
	Structural Analysis	1 Base of Shelter 2 Foundation 3 Walls 4 Roof 5 Adaptability	This will assess the structural capacity of individual building elements including foundations, walls, and details of openings within walls, roof and critical connection details.
	Material testing	1 Base of Shelter 2 Foundation 3 Walls 4 Roof 5 Adaptability	Material testing to obtain the physical characteristics of different materials used in the construction and protection of shelters. Tests should be undertaken on a variety of plaster/ render mixes to understand their flood resilience properties. This should include the use of lime and other stabilisers.
	Full scale structural testing	1 Base of Shelter 2 Foundation 3 Walls 4 Roof 5 Adaptability	Test the influence of water on the performance of full scale building elements including being immersed in water for extended periods of time.

Criteria	Activity	Indicator	Description
Acceptability	Beneficiary Consultation	6 Comfort 7 Space 8 Weatherproofing 9 Protection 10 Health and Safety	Semi-structured interviews and/or homeowner surveys will provide an understanding of the user perspectives.
	Dynamic thermal modelling	6 Comfort	This will assess the thermal capacity of different shelter typologies including the effect of the mass of the building and the impact the roof design has on the protecting the walls (and therefore the internal space) from radiant heat. This analysis will take in to account the changes in temperature throughout the day and year. Shelters in different climatic regions (Northern and southern Sindh) should be taken in to account.
	Daylight Analysis	6 Comfort	This will measure the luminance level at different times throughout the day and year. The luminance level will be affected by the total design of the shelter including the windows, openings, doors, building layout, building forma and roof design.
	Air quality analysis	10 Health and Safety	By calculating the amount of fuel used for cooking the amount of carbon dioxide produced when cooking can be estimated. This along with an analysis of the shelter design (building form and openings) to understand the number of air changes per hour and estimate can be of the concentration of carbon dioxide in the shelter.
Sustainability	Stakeholder Consultation	11 Cost 12 Life cycle cost 13 Local supply chain 14 Natural Resources	Key informant interviews with Organizations implementing shelter will provide a better understanding of costs of materials, labour (skilled and unskilled) and the different implementation strategies used by the various Organizations. Semi-structured interviews with beneficiaries will provide a better understanding of what the beneficiaries contributed to the construction of the shelter and the true cost and time taken to maintain their shelters.
	Analysis of BoQ	11 Cost 12 Life cycle cost	This will provide an understanding of the materials used in the construction and the material costs and what the beneficiaries are responsible for supplying / constructing. Shelters in different climatic regions (Northern and southern Sindh) should be taken in to account.
	Whole life cycle cost analysis	12 Life cycle cost	The benefit of undertaking this analysis is that is accounts for the costs which occur after the shelter has been constructed, such as maintenance. By quantifying the Whole Life Cost of different shelter types will provide a useful measurement to undertake a comparative analysis.
	Supply Chain Analysis	13 Local supply chain 14 Natural Resources	A supply chain analysis will enable more detailed understanding of the source and manufacturing process of construction materials. It will also allow the creation of carbon factors for the different construction materials to be able to gain an understanding of the carbon footprint of the different shelter typologies. It is important that the carbon factors for each material type will be based on the local context.

Table 6 Detailed research Activities

References

Desk Study

1. ADPC (2005) Design and construction of housing for flood-prone rural areas of Bangladesh
2. Alam, J.B. (2000) Village infrastructure to cope with the environment: concept of flood shelter and its planning to cope with flood.
3. Almora, U. (2010) Reducing Risk/ Promoting Sustainability
4. ALNAP (2008) Flood disasters: learning from previous relief and recovery operations
5. Arup International Development (2009), ASPIRE Assessment
6. Broadbent (nd) Traditional vs. Modern construction practices
7. Choudhury, J.R (1996) Design and construction of housing to resist natural hazards.
8. Corsellis, T & Vitale, A. (2005). Transitional settlement: displaced populations. Oxford, Oxfam GB.
9. CRS (2010) Flood Resistant Shelter Pilot Project in India
10. da Silva, J. (2010) Lessons from Aceh - Ove Arup Partners Ltd. and Disasters Emergency Committee.
11. da Silva, J. (2007) Quality and standards in post-disaster shelter. The Structural Engineer: Journal of the Institution of Structural Engineers. 85, 25-32.
12. DFID (2011) DFID's Approach to Value for Money (VfM)
13. DFID (2011) Humanitarian emergency response review
14. FEMA (2012) Hurricane Isaac in Louisiana Mitigation Assessment Report
15. Golz et al. (2013) Assessing the effects of flood resilient technologies
16. Habitat for Humanity International (2012) Disaster response
17. IFRC (2011) Shelter safety handbook: some important information on how to build safer
18. IFRC (2011) Transitional Shelters, Eight Designs
19. ISDR (2008) Good practices and lessons learned from experiences in Asia – Pacific regional
20. Moring, J.M. (2013) "Looking back at reconstruction and disaster risk reduction in housing". Building and Social Housing Foundation
21. Nordlie, O. (2013) "Shelter and settlement impact evaluation tool". UN-Habitat
22. ODI 2006. "Evaluating humanitarian action using the OECD-DAC criteria" – an ALNAP guide for humanitarian agencies
23. Shaw, J. (nd) Design and delivery of post-disaster housing resettlement programs: case

studies from Sri Lanka and India

24. Sphere Project (2004) Humanitarian charter and minimum standards in disaster response
25. Southasiadisasters (2007) Flood in South Asia: from impact to knowledge
26. UNCHS (1998) Executive summary of post-flood shelter rehabilitation assessment report, Bangladesh
27. UN-Habitat (2012) Baluchistan Update, District Jaffarabad Flood 2012
28. Wadley, D. (2012) Forced Migration Review: Issue 41. Shelter interventions prevent and mitigate displacement

Documentation review

- DFID (2012) After the rains – 2011 shelters
- DEC (2012) DRR in Pakistan: The Contribution of DEC Member Agencies, 2010-2012
- Handicap International (2012) Shelter Construction Project, Project Summary
- Heritage Foundation and IOM (2011) Build back safer with vernacular methodologies – DRR driven post-flood rehabilitation in Sindh
- IOM (2012) One room Shelter Project, Damage Report Key Findings
- IOM (2011) One Room Shelter Programme
- IASC/Pakistan Floods Shelter Cluster How do I protect my house against floods? (poster)
- ISET Pakistan (2013) Climate Resilient Housing: An overview of the Policy Landscape in Pakistan
- Pakistan Floods, Rapid Response Plan, United September 2011
- Shelter Cluster Pakistan (2013), Compendium of key documents
- Shelter Cluster Pakistan (2012), Emergency Shelter Response Strategy
- Shelter Cluster Pakistan (2012), Early Recovery Shelter Response Strategy
- Shelter Cluster Pakistan (2012), One Room Shelter Cluster Technical Guidelines
- Shelter Cluster Pakistan (2010), Shelter Response Strategy
- UN (September 2011) Rapid Response Plan
- UN-Habitat (2012) Pakistan Settlements Flood recovery Programme (PSFRP) – Project completion report Dec 2012
- UN-Habitat (2012) Shelter projects 2010

- UN-Habitat (2010) Make your new house safe against flood, few recommendations for single story adobe house
- UN-Habitat (2010) Make your new house safe against flood, few recommendations for single story Loh Kaat house
- UN-Habitat (2010) Make your new house safe against flood, few recommendations for single story mud house
- UN-Habitat (2010) Technical Specification for earthen Buildings in flood affected areas for one storey height
- UN-Habitat (2010) Technical Specification for masonry house in flood affected areas for one storey height
- UN-Habitat (2010) Technical Specification for Loh Kat (Timber pole) House in flood affected areas for one storey height
- UN-Habitat (2010) Matrix for outreach message: how to build back safe
- UN-Habitat (2010) How to build back safer
- UN-Habitat (2010) Guidelines for flood building resistant housing

Appendix A

Hazard Maps

A1 Hazard Maps

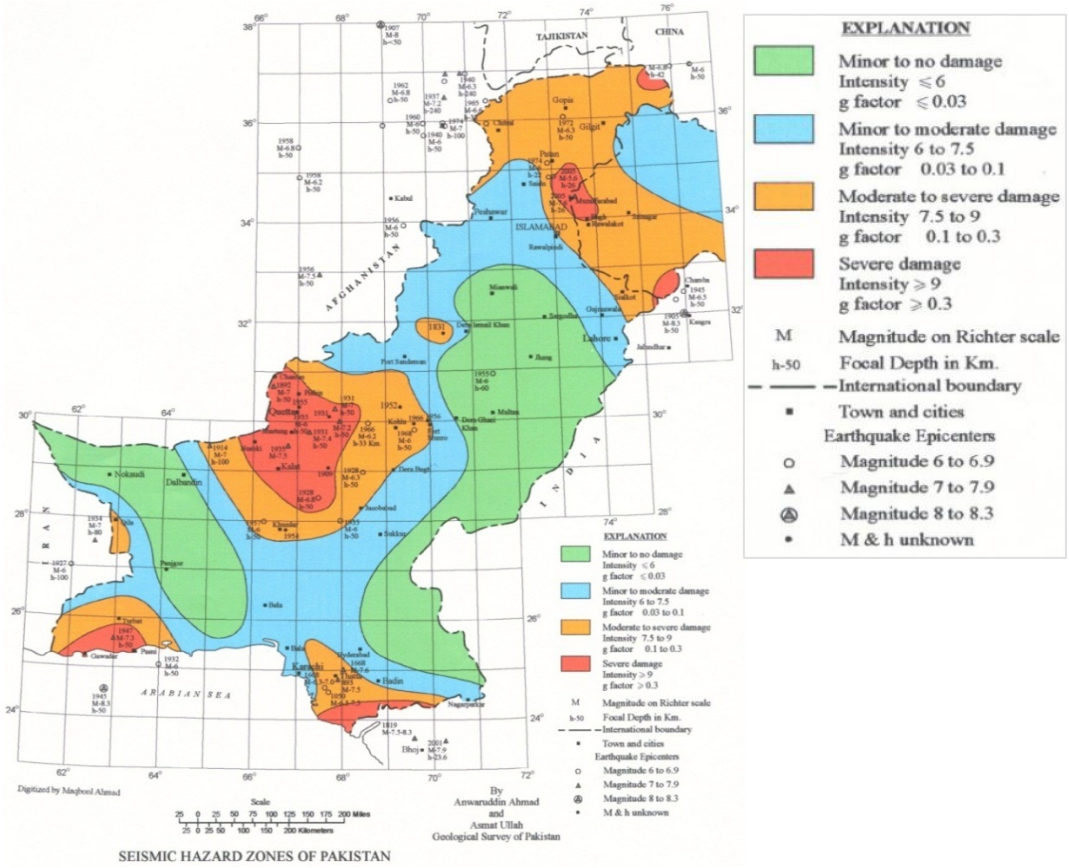


Figure A.1 Seismic Hazard Zone Map (Source: Geological Society of Pakistan, year unknown)

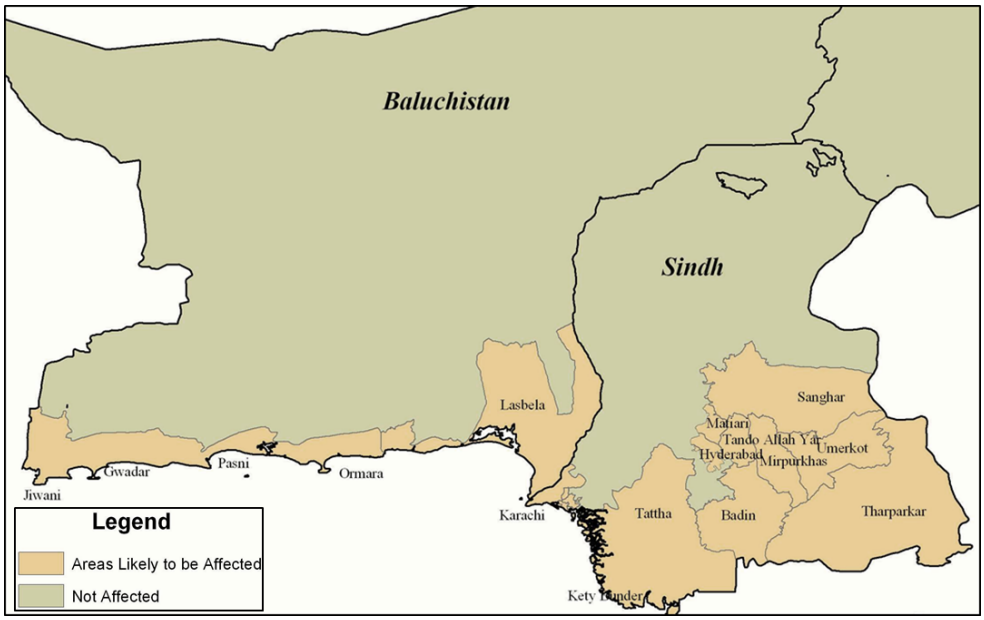


Figure A.2 Coastal areas likely to be impacted by a cyclone (prepared by: Emergency Resource Centre – Church World Service, June 26, 2007)

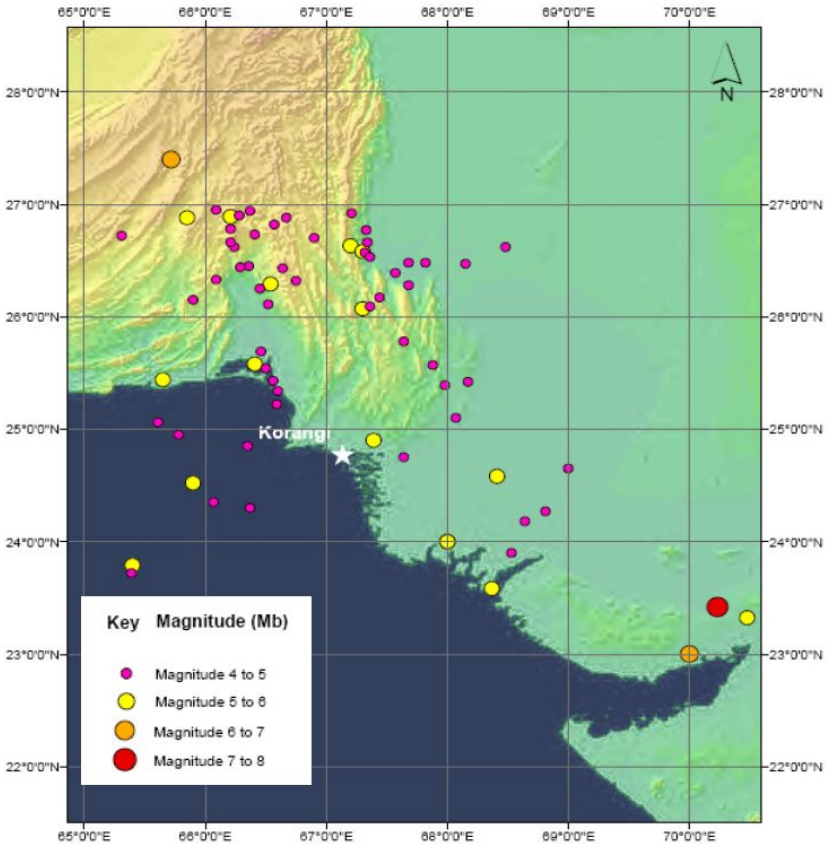


Figure A.3 Earthquakes with magnitudes greater than or equal to 4, recorded from 1973 by USGS, including USGS historical events from 1688, 1845 & 1965. Other historical events could not be located from this source. The star marks a site in Karachi. (Source: United States Geological Society earthquake catalogue from 1973 - 2008)

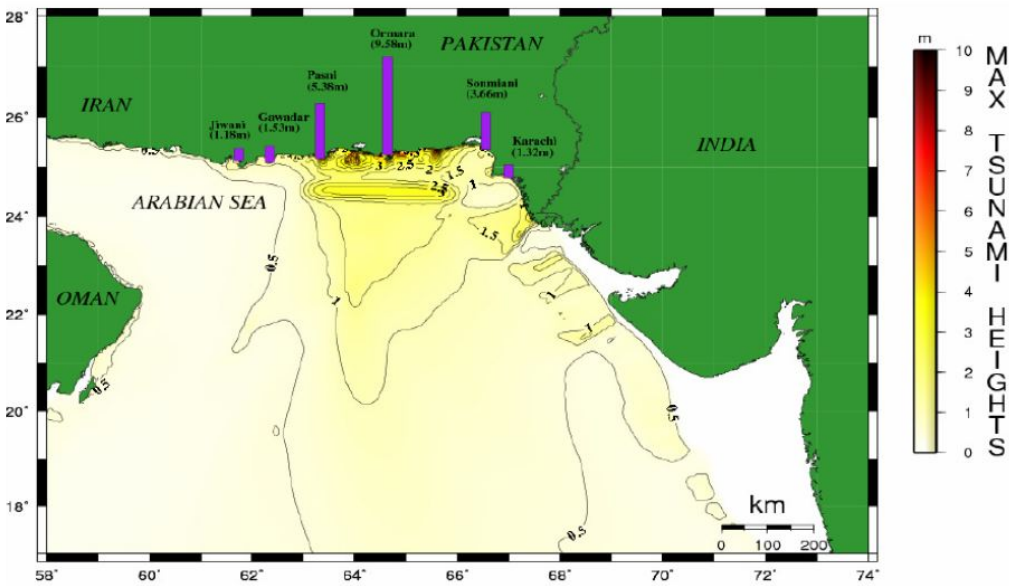


Figure A.4 Simulated tsunami risk from 8.5 magnitude event in the Makran subduction zone off the coast of Pakistan (source: Arup confidential 2008) [Note: resolution of original figure is poor]

Appendix B

Shelter Response 2010-2012

B1 Programme Documentation

The document register annexed as Appendix E identifies the 767 documents received from the shelter agencies which Arup contacted directly (see Table B.1).

	Organization
1	ACTED
2	CESVI
3	CONCERN
4	CRS
5	HANDS
6	IOM
7	QATAR Charity
8	TFK
9	UN Habitat
10	UNHCR

Table B.1 Organizations Contacted Directly

B2 Database

The Database[2] has been issued to IOM separately as an Excel File (Ref: 131213_Arup Shelter Database Southern Pakistan.xls). The first worksheet labelled 'Table A' collates information on humanitarian shelter programmes in southern Pakistan since October 2010 using the fields below (see Table B.2).The second worksheet labelled 'Table B' provides additional information: technical specifications, key features, materials, technical drawings, photos, images.

Database Field	Description
Who	Organization responsible for the shelter programme and implementing partners.
When	Year of the flooding to which the Organization is responding to and year of construction
What	Type of shelter that was built/delivered (e.g. One Room Shelter or T-Shelter) and numbers.
Where	Province, district, and/or tehsil where the shelter was built
Construction Methodology	Overall type of construction of the shelter (e.g. mud, adobe, loh kaat, burnt brick, or concrete)
Shelter Design	Photos, technical drawing and information about the shelter which elaborates on the technical aspects such as drawings, photos, and specifications.
Flood Resistant Features	Elements of the shelter design that enhances its flood resistance.
Cost	Overall cost of the shelter and cost of its different components
Method of Assistance	Reflects our interpretation of the way the project was implemented and refers to type of assistance provided to homeowners to construct a shelter. In order to be concise about the form the assistance takes, this heading is further broken down into the following options: 1. Knowledge: Direct (technical expertise, legal, and/or environmental), transferred (training and/or capacity building) 2. Financial: Cash, vouchers, loans, Micro-finance, etc. 3. Physical: Materials, tools, t-shelter, etc.
Who Built	In construction, either the individuals themselves (self-help), the community, an implementing partner, a contractor or direct implementation;
Damage in Subsequent Floods	Whether any evaluation was carried out on the shelters following flood episodes

Table B.2 Database fields

[2] Terms of Reference for Developing a Research Proposal into Improved Shelter for Responding to floods in Southern Pakistan (Output 2)

Appendix C

Fieldwork

C1 Fieldwork Itinerary

19 Nov Tue	20 Nov Wed	21 Nov Thurs	22 Nov Fri	23 Nov Sat	24 Nov Sun	25 Nov Mon	26 Nov Tue	27 Nov Wed	28 Nov Thu	29 Nov Fri
Day 1	*Day 2*	*Day 3*	*Day 4*	*Day 5*	*Day 6*	*Day 7*	*Day 8*	*Day 9*	*Day 10*	*Day 11*
Arrival in Islamabad	Karachi	TRAVEL in Sindh:	TRAVEL in South Sindh:	TRAVEL in South Sindh:	TRAVEL to Nothern Sindh: Hyd to Sukkur	TRAVEL in Northern Sindh:	TRAVEL in Northern Sindh: Shikarpur	RETURN: Sukkur - Islamabad	Islamabad	Islamabad
		2011 response	2011 response		2010 response	2010/12 response	2010/12 response			
Bilateral Meetings	Bilateral Meetings	**Badin**	**Tando Allah Yar**	**Umerkot**	Travel day	**Jacobabad**	**Shikarpur**	Travel day	Bilateral Meetings	Bilateral Meetings
IOM, SC and DFID	PDMA	CWW	Heritage Foundation/ TAY 3	IOM/ UC Sher Khan Chandia		ACTED , SRSO / UC Dinapur(2010	IOM (2010)/ UC Pir Bux Shujrah	PDMA, Sindh	NDMA	UNHCR
	HANDS	SEAD, UC Kolhi	PIN /UC Sanjar Chang	HANDS/ UC Kunri Memon		CRS (2012) , ACTED (2010)/ UC Bachro	IRC , HANDS (2012) / UC Lodhran		DFID	Debriefing SC TWIG
	HF		TKF/ UC Piyaro Lund	CESVI/ UC Fazal Bhumbro		UNHCR,HANDS (2010)/UC Mirpur Burrio			UN-Habitat	Debriefing IOM/SC
	IOM in Hyd	**TMK**	**Umerkot**	**Mirpurkhas**		**UC Talkat Thul**				
		IOM/Tando Ghulam Hyder	CESVI/ UC Araro Bhurgari	IOM/UC Soofan Shah (Khokhar)		IOM (2010)				
		UN Habitat & Qatar Charity /UC Lakhat	ACTED / UC Shadi Pal	Concern/UC Mir Ghulam Hussain						*Next day departure from Pakistan*
			HANDS/ Atta M. Palli	ACTED/ UC Daulatpur						

C2 Semi-structured interviews

The table below includes questions and discussion points which guided the semi-structured interviews.

CRITERIA	INDICATORS (PRODUCT)	INDICATORS (PROCESSS)
QUALITY	Habitability Temperature (cold/ heat) Damp Weatherproof (wind and rain) Ventilation Relative Humidity Light Privacy Vector Control Safety (fire/toxicity) Cooking WatSan Toilets Security Noise Accessibility Space (size) Flexibility Livelihood Durability Maintenance and repair Structural Soundness/ integrity	Beneficiary engagement – Are inhabitants involved in selection process and design development Stakeholder engagement - Have the surrounding communities been involved in process also as well as governments/ other Organizations (stakeholder mapping exercise) (managing conflict) Is land tenure resolved and clearly defined for various stakeholders in the project? Accountability (feedback)

CRITERIA	INDICATORS (PRODUCT)	INDICATORS (PROCESSS)
DRR	Location Physical planning Vegetation Sufficient space between buildings Sufficient distance from Hazardous sites Risks to human health (contamination) Evacuation routes Appropriate communication links Safe refuge spaces Risk mitigation measures been undertaken? Civil engineering works Drainage system Provision of flood barriers on site / at source Temporary water diversion Retention features Retaining walls Slope stabilisation Design Construction Methodology Mud Adobe Loh Kaat Burnt Brick Concrete Block Building Configuration Plan arrangement (square/ rectangular/ circular) Re-entrant corners (U/ L shaped) Elevated Buildings (plinth/ stilts/ platform)	Location Has hazard assessment been undertaken? (multi) Has site assessment been undertaken? Site characteristics Soil conditions Fault lines Topography Proximity to water bodies Water table Vegetation Community consultations undertaken to identify specific site risks Consultations with PDMA/ NDMA?

CRITERIA	INDICATORS (PRODUCT)	INDICATORS (PROCESSS)
	Roof (single or double pitch/ flat/ overhang) Gable ends Parapets Modifications Change in cladding materials Wall layout New openings in walls/ roof Extension horizontally Extension vertically Use of roof (storage) Foundation Walls Roof	
EC IMPACT	Appropriate technology Cost effectively maintained Availability of local skill/ knowledge Operation & Maintenance Life-cycle costs – is it appropriate?	Value for Money Detailed understanding of costs and benefits over the entire lifecycle How have non-monetary costs been included Risk Management Have risks of programme been identified? Carbon Pricing Cost of carbon been incorporated in project evaluations Alignment with regional strategies Has a socio-economic baseline assessment been undertaken to understand impact on local economy? Have opportunities to contribute to local production been identified? How is project being financed? Is the project financially feasible? Has the amount of money to be spent in the local economy been determined?

CRITERIA	INDICATORS (PRODUCT)	INDICATORS (PROCESSS)
		How does the level of expenditure relate to typical levels of sector/ investment in area or region? Ethical competition – Has a wide cross-section of potential suppliers/competitors been identified along with an indication of their potential capacity, quality and price of goods or services? Local Sourcing - Has the local supply chain been understood? Has the project maximised local sourcing of goods? Access to finance - Is affordable finance available for local entrepreneurs / enterprises? Distortions to local economy - Has the economic impact on the local economy been understood? E.g. major population influx, competition for local resources Employment Creation – Are measures in place to ensure that local people benefit from job opportunities? Will opportunities be sustained once the project is finished? Are there adequate livelihood opportunities, shopping facilities and markets accessible from the site? Livelihood opportunities are needed for the creation of sustainable settlements. If they are too far away or transport is too expensive beneficiaries may chose not to occupy their new houses. Labour Standards - Are there systems in place for managing health and safety in workplaces associated with the development? Training - Does the project include training activities for local workers if it is necessary? Is there a shortfall in local skills, and are there measures in place to fill this gap?

CRITERIA	INDICATORS (PRODUCT)	INDICATORS (PROCESSS)
ENV IMPACT	Materials Specification Minimising material wastage Ozone depleting substances - Are any ozone depleting substances proposed for use in the construction or operation of the infrastructure? Cooking What form of energy is typically used for cooking? Has this impacted the design? Energy What form of energy / technology is used locally for heating / cooling? Has this impacted the design? Where possible have sustainable alternatives been proposed? Land Has the site been selected to minimise negative impacts on communities and areas of ecological importance? Has the site been used previously? Is the land contaminated? Are there pathways that contamination could potentially follow on-site/off-site that could lead to receptors (people, soil, groundwater, etc.) Sites with previous development may include hazardous locations, such as garbage dumps or septic systems. They may also have existing structures or infrastructure which may be reused as part of site development. Does the project ensure that soil is protected and there are good practices in place for soil replacement? Have potential sources of pollution been identified in the source water for the infrastructure e.g. industrial discharges in the vicinity of the abstraction point? Water Water pollution - Have potential sources of pollution been identified in the source water for the infrastructure e.g. industrial discharges in the vicinity of the abstraction point? Sewerage treatment and disposal - Has a sustainable disposal route for	Sourcing of Materials - Are goods and services procured from sustainable sources? Is there auditing of the supply performance against procurement policy requirements? Procurement Policy - Is there a policy on the procurement in place? Have opportunities to reduce and control waste been taken and are staff and key stakeholders aware of the need to reduce waste? Have materials with lower lifecycle impacts been considered? Embodied Energy Has the embodied energy of Transport / Materials been considered? Embodied energy Has the embodied energy of Transport / Materials been considered? Production - Where are materials produced? Waste generation - Has a sustainable disposal route for solid waste / sewage (either on-site or off-site) been considered in the infrastructure planning? Whole life analysis: Recycling/reuse of materials - Has the infrastructure been designed to allow for a high degree of flexibility to allow for a range of future usage scenarios and/or allow for ease of deconstruction and materials recovery? Have re-used / recycled materials been considered and used wherever possible? Land Has the community been involved as the key stakeholder in the design / planning process and have their views been supported in the planning process? Are development plans in conformance/compliance with relevant local/regional planning requirements for the site? Bio-diversity – Protected/ sensitive areas – have these been identified. Consult with Local and national governments and environmental NGOs. Local and digital maps and satellite imagery Environmental risk management - Have the hazards and risks associated with the infrastructure / housing been identified and the procedures for their management been set out in an Environmental Management Plan (EMP)

CRITERIA	INDICATORS (PRODUCT)	INDICATORS (PROCESSS)
	sewage (either on-site or off-site) been considered in the infrastructure planning? Water availability - Has the extraction capacity of the water resource/aquifer been quantified? How will future development affect the availability of water from the resource/aquifer? Water efficiency – Has the infrastructure been designed to minimise water consumption, keeping in mind minimum daily per capita water needs? Bio- diversity Natural conservation - Does the site conserve the natural environment where possible? Have measures being taken to minimise losses on biodiversity and habitat conservation objectives? Energy Energy efficient design, processes and material selection Would the use of different construction/operation processes or different material selection reduce energy usage, both in operation and construction? Source of energy - Have renewable energy sources been considered for use in the construction / operational phase? Is the supply on-site? Have efficient sources been considered?	

C3 Photographs

Photo 1
IOM, Badin, UC Tando Guhulam Hyder
Elevated ground

Photo 2
HANDS, Shikapur
Mud/ Lime render

Photo 3
ACTED, Jacobabad, Pathan Khan
Burnt brick ORD with flat roofs and no overhang

Photo 4
IOM, Umerkot, Qazi Shahid Memon
Flat/ very shallow single pitch roof with small overhang

Photo 5
CESVI, Choudri Majeed Gihuman, Mirpur Khas
Adobe Shelter Verandah extension using materials (bamboo/ timber) supplied by CESVI

Photo 6
CESVI, Choudri Majeed Gihuman, Mirpur Khas
Large timber beams span on to walls with no way of spreading the load

Photo 7
IOM, Umerkot
Extension on plan Holes are made in the mud walls to support large timber beams

Photo 8
IOM, Shikarpur
Large beams used for roof of extension connected to thin brick wall and crushing the brick

Photo 9
Heritage Foundation, Tando Allah Yar
Training Poster

Photo 10
Heritage Foundation, Tando Allah Yar
Full scale section through an adobe brick foundation for training purposes

Photo 11
HANDS, Umerkot, Attar Mohammed Palli
Good sized openings to allow for light and cross ventilation with thick mud walls which help maintain the internal temperature

Photo 12
HANDS, Umerkot, Attar Mohammed Palliammed Palli
Chora mud house with thatch roof with gaps which allow water in.

Photo 13
CRS, Jacobbaad
Loh Kaat house built with no windows on request of homeowner for security as no windows would have been supplied.

Photo 14
TFK, Tando Allah Yar, UC Piyaro Lund
Cooking inside the shelter on the floor using firewood.

Photo 15
IOM, Jacobabad, Taulka Thulabab
Ventilation holes covered up to stop birds nesting.

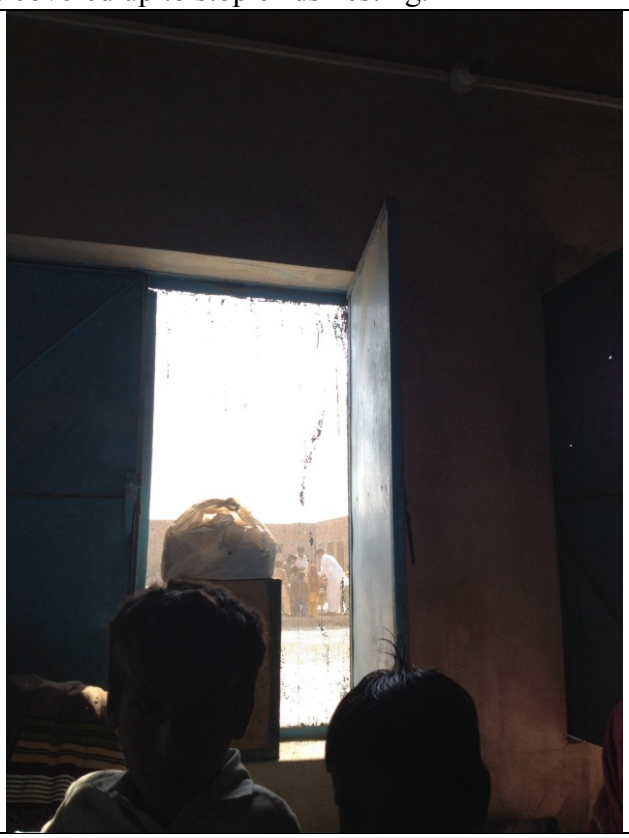


Photo 16
UNHCR, Jacobabad
Burnt brick masonry ORS with mosquito nets and durable windows

Photo 17
SEED, Badin, Kolhi
Maintaining mud plaster of a Loh Kaat Shelter

Photo 18
Brick Kiln, Shikarpur
Child working at brick kiln

Appendix D

Key Criteria and Indicators

D1 Preliminary Criteria and Indicators

CRITERIA: REDUCE VULNERABILITY

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Site Location	Hazard		Is the project located in a non hazard zone?	ASPIRE (2009)	
			Shelters located to reduce exposure to hazards.	IFRC (2011) Transitional Shelters, Eight Designs	
				IFRC (2011) Shelter safety handbook	Best practice guidance on siting
			Is the site in an area which is at risk to natural hazards?	da Silva. J (2010) Lessons from Aceh, Arup and DEC FEMA, 2013	
			Settlements/ Shelter is not built on a site that is frequently flooded.	Corsellis , T & Vitale A (2005) Transitional Settlement	
			Avoid land sliding areas, low lying / river beds. Build on higher ground,	UN-Habitat (2010) Guidelines for flood building resistant housing	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			Avoid construction on; steep slopes / loosely filled sites, sites prone o landslides or rock fall, natural or built depression without sufficient drainage, near or above river/canal banks, where water table is close to the surface	UN-Habitat (2010) How to make your new house safe against flood.	
			Ensure shelter is situated in a safe location with minimal exposure to hazards	Shelter Cluster, 2012 Design principles	
	Land tenure		Shelter built on area with proper land rights - by either legal documents or agreement with landlord/ neighbours' confirmation	Shelter Cluster, 2012 Design principles	
	Erosion		Vegetation and trees have been retained where possible to increase the water retention and minimise soil erosion and provide shade	Sphere Project (2004)	
	Soil conservation		Does the project ensure that the soil is protected and there are good practices in place for soil replacement?	ASPIRE (2009)	
	Physical Planning		Has the site been planned to mitigate the impacts of hazards e.g. vegetation, sufficient space between buildings, evacuation routes etc.	da Silva. J (2010) Lessons from Aceh, Arup and DEC / FEMA (2013)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
				IFRC (2011) Shelter safety handbook	Best practice guidance on settlement planning
	Risk Mitigation		If the shelter has been built in a vulnerable area have engineering works been undertaken to reduce risk? E.g. drainage systems, provision of flood barriers on site/ at source, temporary water diversion, retention features, retaining walls, slope stabilisation etc.	da Silva. J (2010) Lessons from Aceh, Arup and DEC / FEMA (2013)	
Community Involvement	Participation during construction of affected populations		Training programmes were provided to affected populations to increase building skills	Sphere Project (2004)	
				ISDR (2008)	
				Southasiadisasters (2007)	
Structurally Sound				da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Base	Elevated ground	Ground is built up 1'6" above adjacent ground		Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies	
			House built on platform to keep it above flood level	IASC (nd)	
		Approx. 3' high	Platform if higher ground is not available	UN-Habitat (2010) Guidelines for flood building resistant housing	
			Adobe & mud - Build raised platform if regular flood level is higher than 3ft or water table is closer to the surface Loh Kaat - Build a platform 6" above flood level	UN-Habitat (2010)	
	Floor Level	Floor is at least 1'6" up to 3' above Natural Surface Level (NSL) adopting a continuous plinth		Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
				IFRC (2011) Shelter safety handbook	Best practice guidance
	Floor			Corsellis , T & Vitale A (2005) Transitional Settlement	Best practice guidance

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Foundation	Plinth			Corsellis , T & Vitale A (2005) Transitional Settlement IFRC (2011), Transitional Shelters, Eight Designs	Best Practice Guidance
				IFRC (2011) Shelter safety handbook	
				FEMA (2012)	
				Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies	
			Plinth rises well above the ground level	IASC (nd)	
		1.5ft above ground level		UN-Habitat (2010) Guidelines for flood building resistant housing	
		Adobe & mud No less than 1.5ft from natural ground level If building, raised platform height should be 6"	Adobe & mud Stones, Burnt bricks or concrete blocks with (1:6) mix cement and sand mortar. Burnt bricks masonry with mud mortar and cement sand plaster/ pointing (1:4) on both sides. Provide DPC of PCC 1:2:4 over top course of plinth 2 " thick or use waterproof mud layer for DPC. Use bitumen and plastic sheet to improve the damp protection	UN-Habitat (2010)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
		Foundations protected below floor level by raising the earth platform 3' wide at top and tapering to NSL over 6' (1 in 2 slope minimum). Top of slope should be 6" below floor level	Damp proof course (either thin layer of concrete with plastic on one surface or just a strong plastic layer) at plinth level is present to prevent moisture rising into the walls. Loh Kaat - Add lime / cement in mud plinth to make the structure waterproof Mud / adobe - Plinth made from stones, fired bricks, concrete with sand cement mortar Burnt brick/Concrete - Plinth to be made from fired bricks / in concrete, cement/sand mortar and plastered with cement/ sand/ lime All - For seismic design - top of plinth to be reinforced with 2 bars or 4 bars in case of concrete plinth	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
	Depth	1 ft deep foundations Burnt brick - 2ft deep Concrete Block-minimum 2' deep below NSL		Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies	
		Adobe / mud - 4ft soft soil or 2 ft hard soil Loh Kaat - Depth of holes for timber poles = 3ft (hard ground) 4ft (soft ground)		UN-Habitat (2010) UN-Habitat (2010) Guidelines for flood building resistant housing	
			Foundation well excavated	IASC (nd)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
		Mud/ Loh kaat and adobe - Excavation depth 18" below undisturbed ground or compacted soil Burnt brick / concrete- minimum 24 " below undisturbed ground / compacted soil	If there is a skeleton (wall columns) the wall structure should be penetrated to a min of 18" (loh kaat/ mud/ adobe) in the ground reaching the solid layer and being reinforced with cement or lime/mud posts to ensure stability Loh kaat - trellis or reed material to penetrate to a minimum of 6" into the ground For burnt brick /concrete construction wall structure / columns (reinforced masonry) should extend 24" in to the ground	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
	Width		Toe / extension at the base of the wall	Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies	
		1.5 - 2 ft		UN-Habitat (2010) Guidelines for flood building resistant housing	
		Adobe - 1.5ft wide Mud - 2 times wall thickness (soft soil) 1.5 times wall thickness (hard soil) Loh Kaat - 1ft diameter min.		UN-Habitat (2010)	
		1.6-2 times thickness of walls (loh kaat, adobe, mud) burnt brick / concrete- min.2' wide		Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
	Protection			Shelter Cluster (2012) 2012	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
				ORS Construction Technical Guidelines	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Walls	Openings			Corsellis , T & Vitale A (2005)	Best practice guidance
				IFRC, 2011, Transitional Shelters, Eight Designs / IFRC (2011) Shelter safety handbook / FEMA (2012)	
			Openings have strong lintels constructed to support the load of masonry above openings	Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies and IFRC (2011) Shelter safety handbook	
		% of openings take up no more than 50% of wall one 2'x1' or two 1' x1'	Mud - openings should be higher than wider, windows and doors kept a minimum of 2' from corners and from each other	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
			Openings that have lintels - Lintel should be minimum 2" thick and 6" longer than opening on each side	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
	Support for Roof		Levelling of walls and use of ring beam to provide firm bed for the placement of roof beams/joists	Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies	
			Adobe & mud - Provide seismic bands at doors/windows lintel and roof level. Either -A). RCC band, B). Wooden Band or C). Reinforced brick band or D) Bamboo band	UN-Habitat (2010)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			Adobe - Roof girders away from openings, bearing pad below girders of concrete, wooden plate or burnt brick.		
			Walls fastened together with top plate/ band or ring beam	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
	Roof Overhang	Roof Overhang (inches) 15" minimum to protect walls from rainwater		Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
			The Shelter has adequate overhangs to help protect the openings from water penetration during the rainy seasons	Corsellis , T & Vitale A (2005) Transitional Settlement	Best Practice Guidance
	Render		Mud / adobe construction - Use of mud/lime render externally	Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies	
			Walls plastered to protect walls from being washed away by flood water	IASC (nd)	
			Adobe - Stabilised mud plaster on both sides of wall up to sill level OR construct walls up to sill level with burnt brick with mud mortar and apply cement sand plaster/ pointing (1:4) on both sides Mud - Stabilised mud plaster on both sides of wall up to sill level Loh Kaat - timber poles treated for insect and decay with bitumen coating and walls plastered	UN-Habitat (2010)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			Walls are adequately rendered. Loh Kaat - lime /mud mix (1:3) Adobe - Use fired bricks for the external face to sill level and adobe brick for internal , or use fired bricks for whole wall up to sill level and above with adobe. If only adobe available increase thickness to 18" up to sill level. Render applied externally all over and internally up to sill level Llime /mud mix (1:3) or bitumen stabilized mud mortar (bitumen and kerosene oil - 5:1, and mud (1.5kg of bitumen for 30kg of mud) or animal dung mixed with mud (lime/cement plaster up to sill level and above sill level lime/mud plaster) 2-3 layers Mud - lime /mud mix (1:3) or bitumen stabilized mud mortar (bitumen and kerosene oil - 5:1, and mud (1.5kg of bitumen for 30kg of mud) 2-3 layers Burnt brick - cement/lime plaster up to sill level as minimum. Best to plaster whole wall Concrete - walls are externally plastered	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
	Thickness	Thickness in inches Mud/ adobe walls - at least 18" thick		Heritage Foundation & IOM (2011)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
		Thickness in inches Mud - 18" thick Adobe - at least 13.5" and should be plastered Burnt brick - minimum 9" but best to increase to 13.5" to increase stability and durability and waterproofing Concrete - 8" thick and should be plastered		Pakistan Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
		Thickness in inches Adobe - 13.5" min Mud - thickness top 12", thickness bottom 18"		UN-Habitat (2010)	
	Panel Size	ft x ft Adobe - 8' x 14' unsupported (max) (h x l) mud - 8' x 12' unsupported (max) (h x l) Loh Kaat - 8'x 18' max (h x l) smaller dimension on plan < 12ft) General - length of the building no more than 3 times its width		UN-Habitat (2010)	
		Panel size (ft x ft) Mud walls (thickness 18") longer than 14' to have intermediate cross partition walls		Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Roof	Pitch	Pitch of Roof Roof has sufficient pitch for rainwater drainage: above 30° for thatch and tiles and above 20° for well lapped corrugated iron sheeting.		Corsellis , T & Vitale A (2005) Transitional Settlement	Best Practice Guidance
			Roof sloped to allow water to drain off house	IASC (nd)	
		Pitch of Roof Roofs laid to minimum of 6" slope (ratio of 1 in 12)	Roofs must have a slope to prevent standing water	Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies	
		2 " max slope to drain water quickly		UN-Habitat (2010)	
		Pitch of Roof Maximum roof pitch advised of 30 degrees for simple pitched roofs A mono- pitch roof pitch up to 10 degree to allow adequate drainage of water Flat roof a minimum slope should be 3/8" per foot	Conical or four sided pitch roof is preferable in areas of high winds (particularly cyclone vulnerable areas) Gable ends of flat surfaces may be more stress by resisting the wind loads	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
	Drainage			Corsellis , T & Vitale A (2005) Transitional Settlement / IFRC (2011) Shelter safety handbook	Best Practice Guidance
			Water spouts / drains for rain water to drain away from the house.	IASC (nd)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			Slope on roof to allow rainwater to run away quickly Where parapets in place - provide 1 or 2 water spouts - the slopes have to be arranged accordingly (minimum 1 %). Water spouts on parapets minimum 2.5" and project minimum 8" Water spouts are well sealed with bitumen without discontinuity in order to prevent rain to penetrate in the structure of roof and walls above. Use of gutters to catch rainwater	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
	Structure			IFRC (2011) Transitional Shelters, Eight Designs	Best Practice Guidance
		4" x 6" or 4" x 8" girder no more than 5ft apart.	Adobe / mud - Bearing pad of concrete/ wooden plate/ burnt brick under the girder. Bearing no less than 3/4 times the thickness of the wall. Roof members should be well tied with each other and to the walls.	UN-Habitat (2010)	
			Load bearing elements - such as beams/ columns joists not placed above a door / window opening, elements of the Roof structure tied together Roof Structure tied down to the walls securely to ensure good resistance to strong winds	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
	Access	4-bamboo and 6-bamboo joists have been tested in Tando Allahyar with a load of 15 persons	Is roof strong enough to take the load of people seeking refuge in floods	Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies	
	Protection		Use of thatch, with plastic sheeting and mud plaster layer with final waterproofing layer made from Lime plaster/ bitumen mixture to provide water-resistant finish to the roof	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	
Climate Change Resilience			Does the project consider the short and long term impacts of climate change on local communities and disadvantaged communities?	ASPIRE (2009)	
Shape			Circular or square plan form Rectangular plan form with ratio of 1:1.5	Heritage Foundation & IOM (2011) Build Back Safer with vernacular methodologies	
Adaptability			Design to allow improvements to shelter e.g. option to include further openings add more insulation	Shelter Cluster (2012) Design principles	
Fire safety			Doors and windows open outwards	Shelter Cluster (2012) 2012 ORS Construction Technical Guidelines	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Adaptable	Extendable		The design can facilitate safe and economic expansion	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
	Incrementally changed		The shelter is designed which can be structurally and spatially adapted to changes of family size and custom with economical ease without the need to demolish or drastically change the overall structure	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
	Upgrading and maintenance		Use of well-known materials and techniques to promote the participation of the beneficiaries in the construction process and its maintenance	Shelter Cluster (2012) Design principles	
			The use of materials and form of construction enable individual households to maintain and incrementally adapt or upgrade their shelter to meet longer-term needs using locally available tools and materials	Sphere Project (2004)	

CRITERIA: ACCEPTABILITY

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			The shelter reflects the needs, local culture, vulnerability and capabilities of the community and resources available	IFRC, 2011, Transitional Shelters, Eight Designs	This could be different in different communities
				Southasiadisaster (2007)	
Relevance				ODI (2006) Evaluating humanitarian action using OECD-DAC criteria	Relevance is concerned with assessing whether the project is in line with local needs and priorities. Appropriateness is the tailoring of humanitarian activities to local needs, increasing ownership, accountability and cost effectiveness accordingly.

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Timeliness and Construction speed			The shelter was built in a timely manner	IFRC (2011) Transitional Shelters, Eight Designs	More complex shelters can take longer to build and require more training and resources to build them
Life Span			Do the quality of materials and workmanship reflect the intended life span of the shelter?	IFRC (2011) Transitional Shelters, Eight Designs	
Cultural Appropriateness	Typology /layout		Design, layout and orientations are appropriate for the local culture	IFRC (2011) Transitional Shelters, Eight Designs	
			Shelters meet local needs, household activities , distribution as well as local cultural requirements	Shelter Cluster (2012) Design principles	
	Flexible space		The design of the shelter should consider a flexible use of space	Shelter Cluster (2012) Design principles	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Size		Minimum $18m^2$ (based on family size of 5 and $3.5m^2$ per person		IFRC (2011) Transitional Shelters, Eight Designs	
		Minimum area per person = $3.5m^2$. If $3.5m^2$ per person cannot be achieved, or is in excess of the typical space used by the affected or neighbouring population, the impact on dignity, health and privacy of a reduced covered area should be considered. Any decision to provide less than $3.5m^2$ per person should be highlighted, along with actions to mitigate adverse effects on the affected population.	Covered area should provide space for the following activities: sleeping, washing and dressing; care of infants, children and the ill or infirm; storage of food, water, household possessions and other key assets; cooking and eating indoors when required; and the common gathering of household members	Sphere Project (2004)	
		The design meets the minimum international space requirements guidelines of $3.5m^2$ per person as a minimum		Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
			Do the users have sufficient covered space to provide dignified accommodation? Can essential household activities be satisfactorily undertaken and livelihood support activities be pursued as required?	da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Privacy			Shelter aims to encourage flexibility in the design such as allowing occupants to add internal divisions for privacy	IFRC (2011) Transitional Shelters, Eight Designs	
			Does the shelter allow sufficient light to enter without compromising privacy? Is it possible to sub-divide the internal volume in order to increase visual privacy whilst maintaining cross ventilation?	Shelter Centre (2010), Transitional Shelter Standards	
			Opportunities for sub division should be provided within individual household shelters	Sphere Project (2004)	
				da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Security			Lockable doors provide the most basic security	IFRC, 2011, Transitional Shelters, Eight Designs	
				Corsellis , T &Vitale A (2005) Transitional Settlement / ISDR (2008)	
				da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Thermal comfort			Provide protection from anticipated extremes of weather. Verandas and high ceilings can make shelters cooler in hot weather, whilst taking care to reduce air gaps or including a lobby area that can help keep shelters warmer in colder weather	IFRC (2011) Transitional Shelters, Eight Designs	
			Warm humid climates - Shelter orientated and designed to minimise entry of direct sunlight Construction of shelter is lightweight and has low thermal capacity Hot dry climates - Construction is heavy weight to ensure high thermal capacity - allowing changes in night and day temperatures to alternately cool and heat the interior, or lightweight with adequate insulation Cold climates - heavy weight construction with high thermal capacity if shelters are occupied throughout the day. Lightweight construction with low thermal capacity and substantial insulation is more appropriate for shelters occupied at night only. Stoves or other forms of space heaters essential - must mitigate risk of fires from the use of stoves and heaters	Sphere Project (2004)	
				ISDR (2008)	Climatic suitability

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			Cold climate - Stoves and heaters are essential part of the heating strategy for a shelter in a cold climate. An adult human at rest produces up to 100Watts of heat where a basic wood stove with limited fuel produces about 1000 watts. Rooms should be well insulated to ensure heat does not escape. Big rooms should be partitioned in order to reduce the air volume to be heated. In cold climates insulation and draught reduction are key to keeping houses warm. A thermal buffer zone is a common approach to the problem. Hot climate - Buildings should have high thermal mass (thick walls and insulating roofs) so cool in the day and not too cold at night). Windows and doors positioned away from prevailing winds which are likely to be very hot.	Corsellis , T & Vitale A (2005) Transitional Settlement	
			The design of the shelter responds to the local climate and ensures comfort for the occupants through all seasons at all times of the year.	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
			The design of the shelter provides sufficient thermal comfort	da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Ventilation			Wet Climates - sufficient openings for good ventilation and air convection, both in the walls and on roof	Corsellis , T & Vitale A (2005) Transitional Settlement	
			Shelter orientated and designed to maximise ventilation in warm humid climates. Cold Climates - minimise air flow particularly around doors and window openings Adequate ventilation should be provided	Sphere Project (2004)	
		Min ventilation shall be achieved through an unobstructed aperture with total area equivalent to $0.01m^2$. Does the design allow for max and min air changes per hour to avoid discomfort of occupants - air changes/ hour should be not less than 7 but not more than 14.	Can doors/ openings be adjustable to control light and heat gain/loss? In cold climates - air flow through the shelter shall be kept to a minimum whilst also providing adequate ventilation for space heaters or cooking stoves In hot climates - Shelter to have double skinned roof ventilation between the layers to reduce radiant heat gain (distance between layers should be at least 100mm)	Shelter Centre (2010), Transitional Shelter Standards	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			The design of the shelter provides sufficient fresh air	da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	
			Shelter allows adequate ventilation to reduce internal temperatures (especially in hot areas).	Shelter Cluster, 2012, Design principles	
		At least two windows to ensure ventilation. Alternatively one or two ventilators executed on the opposite side of the window. One window of 2'x1' or two 1' x1'	In areas where it gets very hot - shelter height should be increased to improve internal ventilation (note this will increase cost of shelter and will need to be structurally checked	Shelter Cluster, 2012, 2012 ORS Construction Technical Guidelines	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Weatherproof			Adequate surface water drainage present around shelter together with the use of raised floors to minimise the risk of water entering the shelter	Sphere Project (2004)	
			The design of the shelter provides protection from the climate	da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	
			Does the project provide appropriate, affordable and well located shelter that provides protection from the elements, security and safety	ASPIRE (2009)	
Vector Control			Flooring that meets external walling with no gaps provided to minimise vector penetration	Sphere Project (2004)	
			Mosquito nets/ fine wire mesh stretched out over the windows and door frames to keep insects out. Holes greater than 6mm in diameter	Corsellis , T & Vitale A (2005) Transitional Settlement	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			closed up using cement, mortar or metal plates (this is the smallest hole a young mouse can enter. Rats can chew through rope or light wire such as chicken wire)		
			Are all doors /openings protected against insects? Is the shelter mosquito proofed in an area long/broad enough for the intended occupancy to sleep in? Are there fixings for additional / replacement mosquito nets to be hung?	Shelter Centre (2010), Transitional Shelter Standards	
				da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Lighting			The design of the shelter considers the sun path and the opportunity to maximise natural light	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
				da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	
Safety (fire/ toxicity)			Does the shelter have two opposite doors to facilitate escape in the event of a fire?	Shelter Centre (2010), Transitional Shelter Standards	
				da Silva, J (2007) da Silva. J (2010)	
Air quality			Ventilation to minimise effect of smoke from indoor household stoves	Sphere Project (2004)	
				Almora, U (2010)	
Community	Beneficiary		Are the inhabitants involved in the	ASPIRE (2009)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Involvement	engagement		selection process and design development?		
	Stakeholder Engagement		Has a stakeholder mapping exercise been carried out? Have the surrounding communities been involved in the process also as well as governments/ other Organizations?	ASPIRE (2009)	
				Southasiadistasters (2007)	
	Participatory design		All members of each affected household involved to the maximum extent possible in determining the type of shelter assistance to be provided	Sphere Project (2004)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Cooking			Does the shelter incorporate appropriate facilities for cooking?	da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	
Water and Sanitation			Does the shelter incorporate appropriate facilities for washing?	da Silva, J (2007) Quality and Standards in post disaster shelter. The Structural Engineer: Journal of the IStructE, 85, 25-32 da Silva. J (2010) Lessons from Aceh, Arup and DEC	
Winterisation			Winterisation of shelters to be applied where necessary due to climatic conditions	Shelter Cluster (2012) Design principles	
Accessibility			Shelters allow the access of the disabled people	Shelter Cluster (2012) Design principles	

CRITERIA: ENVIRONMENTAL IMPACT

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Resources	Sourcing of materials		Unsustainable demand on the natural environment should be mitigated. Local natural environmental resources are managed to meet the on-going and future needs of the disaster affected populations	Sphere Project (2004)	
			Materials avoid increased pressure on natural resources	Shelter Cluster (2012) Design principles	
			The choice of materials used in the construction considers the environmental impacts.	IFRC (2011) Transitional Shelters, Eight Designs	
			Construction materials used have no adverse impact on the natural environment	Sphere Project (2004)	
			Are goods and services procured from sustainable sources? Is there auditing of the supply performance against procurement policy requirements?	ASPIRE (2009)	
			The design of the shelter draws on but does not deplete local resources. The selection of materials from sources within the bioregion, to minimise embodied energy through transportation and support to local markets	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
	Procurement Policy		Is there a policy on the procurement in place? Have opportunities to reduce and control waste been taken and are staff and key stakeholders aware of the need to reduce waste? Have materials with lower lifecycle impacts been considered?	ASPIRE (2009)	
	Embodied Energy		Has the embodied energy of Transport and materials been considered?	Ledyard Marks, M et al (2013) "Post Disaster shelter and energy efficiency: A Scoping	
			Materials chosen in order to minimise the embodied energy of the whole construction process	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
			Preference is given to natural over industrialised materials and components.	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
	Carbon Pricing	Cost of Carbon		ASPIRE (2009)	
	Reusable/ Recyclable / biodegradable		Materials and components selected for the design are considered in relation to the components individual life-cycle cost and possibility for reuse and recycling following either demolition or deconstruction	Almora, Uttarakhand (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
			Salvaged materials have been used in the constructed of the shelter	Sphere Project (2004)	
			Salvaged materials used in the construction of the shelter	Shelter Cluster (2012) Design principles	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			Shelter can be dismantled for reuse	Shelter Cluster (2012) Design principles	
Natural Environment			Has an environmental assessment has been undertaken to understand the impacts of the disaster on the local natural environment and environmental risks and vulnerabilities?	Sphere Project (2004)	
Waste Generation			Has a sustainable disposal route for solid waste / sewage (either on-site or off-site) been considered in the infrastructure planning?	ASPIRE (2009)	
Whole life Analysis			Has the infrastructure been designed to allow for a high degree of flexibility to allow for a range of future usage scenarios and/or allow for ease of deconstruction and materials recovery? Have re-used / recycled materials been considered and used wherever possible?	ASPIRE (2009) Ledyard Marks, M et al (2013) "Post Disaster shelter and energy efficiency: A Scoping	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Land	Planning intent		Are development plans in conformance/ compliance with relevant local/regional planning requirements for the site? Has the site been selected to minimise negative impacts on communities and areas of ecological importance?	ASPIRE (2009)	
				Southasiadisasters (2007)	
	Site location		Has the community been involved as the key stakeholder in the design / planning process and have their views been supported in the planning process?	ASPIRE (2009)	

Biodiversity	Protected Areas		Have these been identified? Does the project avoid any significant effects on protected areas?	ASPIRE (2009)	
	Nature Conservation		Does the site conserve the natural environment where possible? Have measures being taken to minimise losses on biodiversity and habitat conservation objectives?	ASPIRE (2009)	
	Environmental risk		Have the hazards and risks associated with the infrastructure / housing been identified and the procedures for their management been set out in an Environmental Management Plan (EMP)?	ASPIRE (2009)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Water	Pollution		Have potential sources of pollution been identified in the source water for the infrastructure e.g. industrial discharges in the vicinity of the abstraction point?	ASPIRE (2009)	
	Sewerage treatment and disposal		Has a sustainable disposal route for sewage (either on-site or off-site) been considered in the infrastructure planning?	ASPIRE (2009)	
	Water availability		Has the extraction capacity of the water resource/aquifer been quantified? How will future development affect the availability of water from the resource/aquifer?	ASPIRE (2009)	
	Water efficiency		Has the infrastructure been designed to minimise water consumption, keeping in mind minimum daily per capita water needs?	ASPIRE (2009)	
Energy	Energy Efficiency		Has energy use been minimised by an energy efficient design, processes and material selection? Would the use of different construction/operation processes or different material selection reduce energy usage, both in operation and construction?	ASPIRE (2009)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
	Energy Sources		Have renewable energy sources been considered for use in the construction / operational phase? Is the supply on-site? Have efficient sources been considered?	ASPIRE (2009)	
	Green Tech		The design seeks to use all available green technologies which will lower the operational energy and subsequent carbon emissions of the shelter	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
Air	Ozone Depleting substances		Have chemical or equipment used containing ozone depleting substances been used in the construction or operation of the project?	ASPIRE (2009)	
	Indirect emissions		Have the indirect emissions from the infrastructure been identified (including those related to transportation) and is the effect on these emissions on ambient air pollutant concentrations understood?	ASPIRE (2009)	

CRITERIA: SOCIO-ECONOMIC

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Cost		Cost of shelter		IFRC, 2011, Transitional Shelters, Eight Designs	
			A shelter that is achievable to build and maintain within the family's means	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide /	
				CRS (2010)	
Local Supply Chain			Local livelihoods have been supported through the local procurement of building materials, specialist building skills and manual labour informed by rapid market assessments and analysis. Sourcing of materials have no adverse impact on the local economy	Sphere Project (2004)	
			Materials purchased in local market	Shelter Cluster (2012) Design principles	
				CRS (2010)	
				ISDR (2008)	
			Has the local supply chain been understood? Has the project maximised local sourcing of goods?	ASPIRE (2009)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Value for Money			Is value for money, as distinguished from lowest cost, part of the criteria for appraisal of the economic performance of the project	ASPIRE (2009)	
	Economy		Are inputs being brought of the appropriate quality at the right price?	DFID (2011), Value for Money	A detailed understanding of costs (including non-monetary costs) and benefits over the entire life cycle
	Efficiency		How well are the inputs converted in to outputs?	DFID (2011), Value for Money ODI (2006) Evaluating humanitarian action using OECD-DAC criteria	
	Effectiveness		How well are the outputs from an intervention achieving the desired outcome on poverty reduction?	DFID (2011), Value for Money ODI (2006) Evaluating humanitarian action using OECD-DAC criteria	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
	Cost-Effectiveness		How much impact on poverty reduction does an intervention achieve relative to the inputs that are invested in?	DFID (2011), Value for Money	
Viability	Risk Management		Have all risks been identified and there is a dedicated process in place for risk analysis and risk management?	ASPIRE (2009)	
	Life Cycle Costs		Have life-cycle costs been established and are they appropriate? Has an assessment of the capacity of the users to pay for the maintenance been undertaken?	ASPIRE (2009)	
	Alignment with regional strategies		Is the project fully aligned with national/regional development plans / policies to enhance the economic sustainability and encourage long-term growth?	ASPIRE (2009)	
	Appropriate Technologies		Does the project use technologies which are suitable for the local context and can be cost-effectively maintained using locally available skills, tools and parts? Does the project scope include the necessary training and capacity development to ensure a local capacity to maintain the technology?	ASPIRE (2009)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
			Capitalise on existing traditional wisdom on materials and technologies with new technology introduced in a minimalistic way to add value to traditional systems and make them more resilient.	ISDR (2008)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
Local Livelihood / markets	Ethical Competition		Has a wide cross-section of potential suppliers/competitors been identified along with an indication of their potential capacity, quality and price of goods or services?	ASPIRE (2009)	
	Access to Finance		Is affordable finance available for local entrepreneurs / enterprises?	ASPIRE (2009)	
	Distortions to the Economy		Has the economic impact on the local economy been understood? E.g. major population influx, competition for local resources	ASPIRE (2009) DFID (2011), Value for Money ODI (2006) Evaluating humanitarian action using OECD-DAC criteria	
	Employment creation		Are measures in place to ensure that local people benefit from job opportunities? Will opportunities be sustained once the project is finished? Are there adequate livelihood opportunities, shopping facilities and markets accessible from the site? Livelihood opportunities are needed for the creation of sustainable settlements. If they are too far away or transport is too expensive beneficiaries may chose not to occupy their new houses.	ASPIRE (2009)	

INDICATORS	VARIABLE	Quantitative Metrics	Qualitative Metrics	Reference	Notes
	Training		Does the project include training activities for local workers if it is necessary? Is there a shortfall in local skills, and are there measures in place to fill this gap?	ASPIRE (2009)	
			The procurement and processing of materials should utilise and reinforce local networks of production and exchange to promote local livelihoods and expertise.	Almora, U (2010) Reducing Risk/ Promoting Sustainability, A Good Practice Guide	
	Labour Standards		Are there systems in place for managing health and safety in workplaces associated with the development?	ASPIRE (2009)	

Key:

	Project Documentation received from Organizations in Pakistan	
	Flood Resilient Shelter Literature	
	Shelter Frameworks	Shelter Assessment Literature
	Shelter Guidelines	

D2 Revised Criteria and Indicators

The following list of indicators was identified during the fieldwork. It also includes initial thoughts on the metrics (qualitative and quantitative).

Criteria		Indicators& Variables					
		Process		Product		Qualitative	Quantitative
Acceptability	1	Timeliness					Number of Man-days (divided in to skilled and unskilled labour) to build the shelter.
	2	Integrated Programme	WASH Livelihood DRR Local partners			Poor - No integration was considered with other agencies / programmes Good - Consideration was given to livelihoods, building resilience, the environment and cross-cutting issues. The programme had an exit strategy or was linked to longer term projects. Were local partners used to ensure continuity. The project was coordinated with other departments, agencies.	
	3			Comfort	Temperature	Poor- Always too hot/cold Very good - Cool when hot outside and warm when cold outside	Number of hours/ day the internal space is over a certain operative (average radiant and air) temperature. (The appropriate operative temperature will vary depending on location and climate.)
					Day lighting	Poor- Dim even at midday Good - Work (e.g. sewing) can be undertaken in the shelter even during the late afternoon	Number of hours per day over a certain (appropriate) luminance level.

Criteria		Indicators& Variables					
		Process		Product		Qualitative	Quantitative
					Ventilation	Poor- Little air movement/ sealed and stuffy Good - Air movement with windows, doors and gaps	Minimum openable area as a % of floor space
	4			Weatherproof		Poor - leaks in normal rainfall Good - never leaks	
	5			Space			Worst case - <3.5m^2 (Minimum area (m^2) per person based on sphere standards is 3.5m^2) Best case - >12m^2/ person
	6			Security and Protection		Poor - No lockable doors/windows, easy to break in, gaps in cladding/ walls Good- Lockable doors/windows and secure walls. Openings are either lockable or designed so people are unable to see in to property.	
	7			Internal air quality		Poor - Cooking is undertake in the shelter with inadequate ventilation. Good - Cooking is never undertaken in the shelter.	Estimated concentration of Carbon dioxide (ASHRAE 62.1-2010 limits carbon dioxide levels to 1000-1200 parts per million)
	8			Vector Control		Poor - insects/ animals can easily enter the property Good- Termite barriers and openings are covered in nets to control animal's /birds/ entering property.	

Criteria		Indicators& Variables					
		Process		Product		Qualitative	Quantitative
DRR / Reducing Vulnerability	9			Construction Typology	Mud Adobe Loh Kaat Burnt Brick Concrete Block	Poor - Mud/ Adobe/ Loh Kaat have been used with no consideration on how to improve the material resistance to flooding. Good - Good quality Burnt Brick/Concrete Block with cement mortar and plaster have been built with good quality workmanship	Physical Material Characteristics Needs verification through scientific testing
	10			Building Configuration (form/ Geometry)	Elevation dimensions Plan dimensions Roof form Elevated Form	Poor - The building form does not take in to account flood mitigation measures e.g. flat roof/ not elevated/ long span / slender walls Good- The building geometry reduces vulnerability to flooding -e.g. large overhangs on roof/ pitched or hipped roof/ elevated building/ plinths at low level	Needs verification through scientific testing
	11			Structural Integrity	Foundations Walls Roof	Poor - Evidence of poor structural performance e.g. settlement/ sagging of roof elements/ exposure of foundations/ no foundations Good -Structurally sound e,g, Foundations founded on solid / excavated ground/ foundations under all walls/ walls appropriately fixed top and bottom/ roof tied to walls / openings in walls appropriately detailed/	Needs verification through scientific analysis
	12			Quality	Materials Workmanship	Poor - signs of poor workmanship and low quality materials (corrosion/ cracking/ spalling/ deterioration) Good - No signs of deterioration	

Criteria		Indicators& Variables					
		Process		Product		Qualitative	Quantitative
	13			Modifications	Verandah / lean- to Extension on plan New Openings in Wall	Poor - Evidence that structural modifications to shelter have an negative impact on the original shelter design Good - No evidence of the structural modifications impacting the structural integrity of the shelter.	
	14	Training	Construction Maintenance Repair Adaptations			Poor - Contractors or hired labour were used to construct the shelters and the community received no training/guidance on how to maintain their property. Good - Homeowners were provided training on how to construct their shelters and procure quality materials. Training was also provided on maintenance and guidance given on how they could adapt their property in the future.	

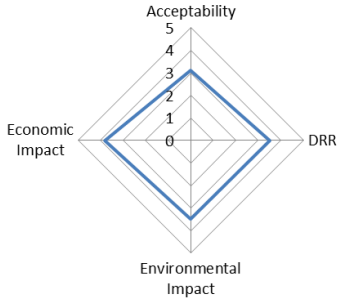
Criteria		Indicators& Variables					
		Process		Product		Qualitative	Quantitative
Socio-economic Impact	15				Cost / element		Material cost of each building element ($ or $/m^2)
	16			Life cycle costs	Affordability of maintenance Non-monetary costs of maintenance	Poor - Homeowners are unable to maintain their property effectively. Good- Homeowners can effectively maintain their properties.	Quantify the life cycle cost
	17	Local Supply Chain				Poor- Materials required to maintain the building are not readily available. Good - Materials required to maintain the building are readily available and easily purchased by the homeowner.	Average distance people travel to source materials (km)
	18	Labour Standards				Poor - Little or no consideration of human rights issues. Good - Human rights are respected, harm to people is avoided and efforts are made to maximize the positive contribution of the project ensuring that human rights are met.	

Criteria		Indicators& Variables					
		Process		Product		Qualitative	Quantitative
Environmental Impact	19			Energy	Energy Efficiency Energy Sources	Poor- Renewable energy is not considered as an alternative energy source. No assessment of energy performance of design options. Good- Energy is minimized through energy efficient design, processes and selection. All project energy needs are satisfied by on-site renewable sources.	
	20			Materials	Recycled / Reused Embodied Energy		Carbon footprint for each building type with specific key features (measured in units of carbon dioxide / m^2)

Table 7Refined list of Indicators

D3 Testing Criteria and Indicators

MUD



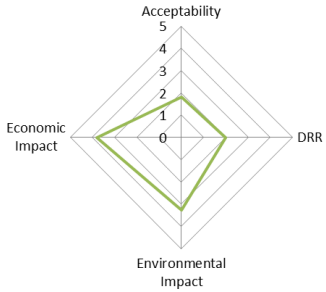
Acceptability – The shelter had good thermal mass with multiple openings resulting in good internal environment which was light and ventilated. However it was scored down on security as no windows or doors were provided. The shelter programme was integrated and no consideration was made for cooking and WATSAN.

DRR – Mud construction is not typically best material for flood resistance but lime was used to help stabilise the mud. The quality of materials and workmanship was very high as a result of training and site supervision. The shelter design also included additional flood resilient features such as built on elevated ground and had a raised plinth. A bamboo ring beam at the top of the walls improved the structural integrity of the shelter and there was a connection of the roof beams to the walls.

Economic impact – Mud construction is low cost and inexpensive to maintain – however regular maintenance is required which carried with it a more significant non-monetary cost in terms of time to maintain.

Environmental impact – The design has low embodied energy but re-use of materials is limited.

LOH KAAT



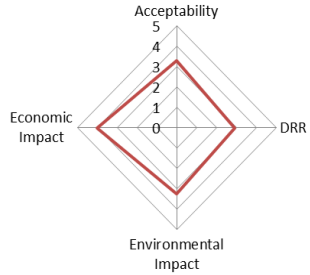
Acceptability – This shelter was weatherproof but with only one opening for the doorway, light and ventilation was limited inside the shelter. No door was provided in the doorway so security was an issue. This shelter was not part of an integrated programme, so space for cooking and WATSAN were not considered.

DRR – Quality of materials used in construction was okay, but the condition was very poor and had very few DRR components. Training was provided during construction but materials were supplied directly by the contractor.

Economic impact – Low-cost and affordable to maintain but frequent plastering is required (every two weeks).

Environmental impact – The design has reasonably low embodied energy, although the bamboo would have been sourced originally from Punjab. However the bamboo structure could be re-used.

ADOBE



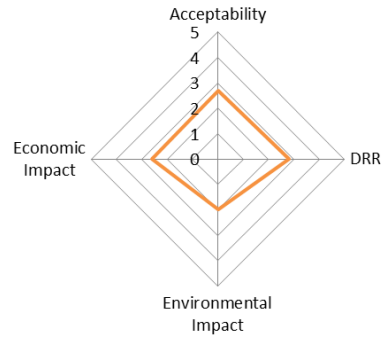
Acceptability - Good design for comfortable temperature, ventilation, light and security. This shelter was not part of an integrated programme, so space for cooking and WATSAN were not considered.

DRR – The shelter was built by skilled labour. Training was given on how to appropriately source materials and how to maintain the structure. A concrete plinth was provided where the timber roof beam sits on the wall which provides good structural detail.

Economic impact – A layer of lime plaster is required every month; however the lime was too expensive for the homeowner and therefore mud plaster was used instead.

Environmental impact - The use of timber in the roof construction pulled down this rating due to serious issues of deforestation.

Burnt Brick



Acceptability – The internal thermal environment was poor (hot, dark and no ventilation) but the homeowners felt safe in a pucca house and had a sense of pride with owning a brick house.

DRR – Brick is more durable that other construction methods seen, however the quality of the workmanship let is down even though skilled masons was used. The use of cement mortar was good. Training was provided to the skilled masons but not community.

Economic impact – Less maintenance is required, therefore the homeowners have more time available for other activities. Materials are available locally but at a high socio-economic cost.

Environmental impact – Brick is typically bad due to the emissions from brick kilns impacting air quality. This shelter had a higher level of embodied energy in both materials (brick and steel beam used) and transportation; but materials could be reused..

D4 Indicators identified from fieldwork and examples

Key Criteria	Indicators	Description	Justification
Safe and Resilient	Foundation	Foundations carry the loads of the building and distribute them over the ground in such a way that movement of the building is minimal. Foundations should be constructed on solid subsoil that is not prone to settling, expansion, or subsidence. They should be protected against frost heave, rain, surface-water run-off and erosion.	Foundations were typically provided in the ORS visited although there are some examples where they are very shallow and could easily be undermined in a flood event.
	Base of Shelter	A typical design feature to mitigate floods in the design of the shelter is to raise houses above ground level.	In southern Pakistan this has been achieved by either raising the ground level when the shelter is situated or by raising the floor level inside the shelter. (Refer to Appendix C3, Photo 1)
	Walls	Walls transfer the building loads to the foundation, which transmits to the ground. The walls need to be durable and structurally sound to be able to transfer wind loads and loads from the roof, as well as resisting water pressures in the event of a flood. They provide protection from the elements, security and privacy for the building's occupants (See Acceptability criteria Nos. 6 and 8, 9).	Burnt brick and concrete block are typically more suitable construction techniques for areas prone to flooding; however, some brick shelters used mud mortar making this less resistant to flooding. Flood resistant design features seem to have been more frequently incorporated in to the vernacular construction typologies, such as; adding lime to the mud used for mortar, plaster and adobe blocks. (Refer to Appendix C3, Photo 2).
	Roof	The roof design plays an integral part of protecting the shelter and it inhabitants during periods of heavy rain that cause flooding. Pitched roofs ensure that rainwater is quickly removed from the roof to prevent stagnating water. Winds produce areas of pressure and suction on the roofs and walls which can seriously damage the building and its occupants. The roof needs to be designed and built so that can resist these forces. Roofs can also be used as a safe haven during flood events and can be an extension of living space by the family. The roof form also needs to be considered in the comfort criteria, No. 6 below.	Many of the shelters visited in southern Pakistan have a flat roof or very shallow single pitch with minimal or no roof overhang. However flat roofs are culturally acceptable in most areas of the Sindh Province. (Refer to Appendix C3, Photo 3 &4)
	Adaptability	The ability of the community/ beneficiaries to maintain, repair and adapt their shelter plays a major role in building their resilience. Significant building modifications (e.g. verandas, extensions on plan, new openings) can have a significant impact on the structural integrity and therefore its durability if not allowed for in the original shelter design.	There is evidence that many homeowners are starting to extend their shelters with verandas or lean-tos. The construction of the some of these structures may weaken the original shelter, for example, additional large roof beams spanning on to walls with no means to spread the loads. (Refer to Appendix C3, Photo 5 to 8) Different shelter projects have different methods and means of providing training from posters to practical demonstrations to site supervision. Projects that hired skilled labour or contractors to undertake the construction didn't always provide training but occasionally training the community to supervise skilled labour. (Refer to Appendix C3, Photo 9 &10)

Key Criteria	Indicators	Description	Example
Acceptability	Comfort	This includes thermal comfort, day lighting and ventilation requirements of the shelter. The physical design of the shelter and each element that makes up the shelter (roof, walls, windows, building form etc.) impact on the how habitable the shelter is.	The roofing and walls contribute to internal temperatures, in addition to the openings provided. Shelters with more mass, for example, thick mud walls were noticeably cooler inside than the thinner walled Loh kaat houses. The windows or amount of openings will directly affect the amount of ventilation and light inside the shelter (Refer to Appendix C3, Photo 11); however this may have an impact on weatherproofing and security depending on the design and position of the openings in the walls and vector control (see Key Criteria 8, 9 and 10 below).
	Space	This relates to the shelter meeting the local needs of the users in terms of size, layout and flexibility to carry out household activities and is appropriate to the local cultural requirements.	Family sizes in southern Pakistan varied from about 5 or 6 people up 20 people in shelter approximately $20m^2$. Shelters are typically used for sleeping, cooking although these activities are also undertaken outside.
	Weather-proofing	This relates to the protection from daily elements, including both wind and rain. Wall and roof designs are critical to ensure the shelters are waterproof but this can be a trade-off to the comfort criteria. Lack of weatherproofing may not always be down to the design of the shelters but can sometimes be associated with poor workmanship.	One particular shelter had a light and airy internal environment which the homeowners appreciated, but it was not watertight due to the poor quality workmanship of the roof thatch which had large holes in it. During the rains the homeowners had to cover the roof with plastic sheeting. (Refer to Appendix C3, Photo 12)
	Protection	This relates to both possessions and whether individuals they feel secure in their own home. Durable windows and doors that are lockable are important to ensure the security of a shelter and the design of ventilation openings should also ensure privacy from onlookers outside.	Where windows or doors weren't provided, or not deemed durable, security was a big issue for the homeowners. In other cases homeowners had explicitly requested that window openings were not built as they would have to pay for the window which they could not afford and this meant shelters were dark and hot in side. (Refer to Appendix C3, Photo 13)
	Health and Safety	This relates to the openings in the shelter; whether there is adequate ventilation for the homeowners cook inside; there is adequate means to control or limit animals, birds, insects which can transmit pathogens or disease entering the shelter, this is also related to the floor and roof details; there is adequate means of escape in the event of a fire.	Homeowners typically cook outside, however they are forced to cook inside when it is too cold to cook or if it is raining. This is directly related to the comfort criteria in particular day lighting, temperature and ventilation. (Refer to Appendix C3, Photo 14) Some homeowners blocked up ventilation holes to stop birds nesting which then had an impact on the ventilation and light. (Refer to Appendix C3, Photo 15). Only example was seen that had nets over the windows. (Refer to Appendix C3, Photo 16)

Key Criteria	Indicators	Description	Example
Sustainability	Cost	The costs of an ORS is typically below 1000USD for a katcha home and can be up to 2500USD for a pucca house. Based on the documentation available it is not possible to provide a meaningful comparison between the different agencies' shelter designs as their approach and physical and financial contributions varied. The true cost of a shelter is not always known and it is more useful to compare the costs of individual building elements construction from different materials.	In some cases homeowners were given a financial contribution and were expected to contribute additional money or materials to complete the shelter.
	Life Cycle Costs	In this context the fundamental thing to consider is whether the homeowners can afford to maintain their shelters and how much time is required for maintenance, therefore the life cycle costs consist of both monetary and non-monetary costs. Both can have an impact on the homeowner financially as shelters that require regular maintenance e.g. every few weeks will have an impact on their livelihood.	Some of the homeowners interviewed during the field visit with mud or loh kaat houses explained the need to re plaster their house every 15 days which meant a large portion of their time is spent maintaining their shelter rather than working. This will vary depending on the construction methodology, quality of workmanship and what flood resistant features were employed. (Refer to Appendix C3, Photo 17)
	Material Supply Chain	This relates to whether the materials required for maintenance, repair and modifications are locally and readily available. This is not only to support the local economy but also homeowners will be less likely to maintain their homes if they have to travel long distances to source materials and this could lead to deterioration which will mean the shelter are more vulnerable to future flood events. Understanding the supply chain of materials is important in order to be able to identify any human rights risks or opportunities.	Most materials can be purchased locally, however some materials have been sourced from other provinces. Bamboo is widely available in Sindh but it is actually grown in Punjab. Child labour and bond labour is regularly used in the brick kilns and therefore raises questions on the appropriateness of his material choice. (Refer to Appendix C3, Photo 18)
	Resources	The choice of materials can have a large impact on the environment. Re-used or recycled materials utilised in the construction can help to reduce the environmental impact but also choosing construction materials that can be re-used should the shelter be damaged and need to be rebuilt following future extreme flooding events. The whole life carbon footprint provides an understanding of the carbon emissions associated with different construction typologies. It takes a view of the embodied carbon of the construction materials over the life span of the shelter including material production, operation, maintenance, and repair and rebuilding the shelter. Whilst the carbon footprint of individual shelters may be insignificant when constructing shelters at scale the impact may be considerable.	Loh kaat due to its timber or bamboo frame is a good example of where materials can be reused to build shelters; whereas mud layered shelters could get washed away in extreme events even if flood resistant design considerations were adopted. The carbon footprint of Loh kaat may be higher than envisaged as the bamboo and timber is not typically sourced locally.

D5 Variables and Metrics

The tables below highlight valid and reliable metrics which have been established, where possible through the desk study.

The metrics in the table below have been colour coded where;

Green - Academic/ scientific evidence exists

Amber - Academic/ scientific evidence needs verification through scientific testing/ analysis

Red - Academic/ scientific evidence appropriate to local context does not exist

Where academic or scientific evidence doesn't exist further research may be required to establish this data.

Criteria	Indicator	Variable	Qualitative Metric	Quantitative Metric	Baseline	Notes
Safe and Resilient	Foundation	**Depth**	Foundations embedded in to firm ground	x inches below undisturbed / compacted ground	Depth depends on construction methodology • Mud / Adobe Construction - 4ft soft soil, 2ft hard soil • Loh Kaat Construction – 4ft soft soil, 3ft hard soil • Concrete/ Burnt Brick - minimum depth 2' (UN-Habitat, 2010)	Depth of foundation may vary depending on different soil types and therefore different locations.
		Width	Foundations wider than walls that they support	x inches	Width depends on construction methodology of shelter • Adobe/ mud/ Loh Kaat - 1.6-2 times thickness of walls • Concrete/ Burnt Brick - minimum 2' wide (Shelter Cluster Pakistan, 2012)	
		Capacity to withstand sustained immersion	Measures have been taken to protect the foundation against flooding. E.g. plinth, render, material choice			
	Base of Shelter	**Elevated Ground**	The shelter is built on elevated ground	x ft above Natural Surface Level (NSL)	The ground level is raised at least 1' 6" above NSL (Shelter Cluster Pakistan, 2012)	Level may vary depending on different locations due to potential flood risk and flood return period.
		Floor Level	The shelter has a raised internal floor	x ft above Natural Surface Level (NSL)	The floor of the shelter is 1'6" to 3' above NSL (Heritage Foundation, 2011)	Level may vary depending on different locations due to potential flood risk and flood return period.

Criteria	Indicator	Variable	Qualitative Metric	Quantitative Metric	Baseline	Notes
Safe and Resilient	**Walls**	**Panel Size**	Wall panel is structurally stable	x ft wide by x ft tall by x inches thick	Maximum panel size (in ft) will vary for each construction methodology Mud (max 12 ft)/ Adobe (max 14ft long) / Loh Kaat (18ft x 12 ft long)/ Burnt Brick / Concrete Length of building no more than 3 times the width (UN-Habitat, 2010)	This will vary depending on the loads the wall is subjected to (some locations have higher wind loads than others) and quality of the material. The panel size will need to be based on a specified wall thickness.
		Thickness	Wall panel is structurally stable	x inches	Minimum thickness (inches) will vary for each construction methodology Mud - 18" Adobe- 13.5" (plus plaster) Burnt Brick - 13.5" Concrete - 8" (plus plaster) (Shelter Cluster Pakistan, 2012), (Heritage Foundation, 2011)	This will vary depending on the quality of the material.
		Openings	All openings have lintels that to support weight of wall above	Size of opening (inches) / % of wall area Distance of opening from end of wall	Maximum size of opening in a wall panel (inches) may vary for each construction methodology - (Mud / Adobe / Loh Kaat / Burnt Brick / Concrete)- maximum 50% wall area (Shelter Cluster Pakistan, 2012) Maximum distance of an opening form the end of a wall for each construction methodology - (Mud / Adobe / Loh Kaat / Burnt Brick / Concrete) – minimum 2’ from corners and from each other (Shelter Cluster Pakistan, 2012)	This will vary depending on the quality of the material.
		Capacity to withstand sustained immersion and extensive rainfall	Walls are adequately protected from flood water and rain e.g. adequately rendered / roof overhang	Roof overhang (inches)	Roof overhang (inches) = 15" (Pakistan Shelter Cluster, 2012), Render mix for different construction methodologies Mud / Adobe / Loh Kaat / Burnt Brick / Concrete	Roof overhang will vary depending on height of walls and pitch of roof. Render performance will depend on the quality of workmanship and quality of materials
		Stability	Walls adequately tied together e.g. with a ring beam. Walls tied in to foundations			

Criteria	Indicator	Variable	Qualitative Metric	Quantitative Metric	Baseline	Notes
	Roof	**Drainage**	Roofs have a slope to prevent standing water and/or include roof drainage systems such as water spouts	Pitch of roof (degrees)	Maximum roof pitch = 30° for simple pitch roof Mono-pitch roof up to 10° Flat pitch - Minimum slope 3/8" per foot (Shelter Cluster Pakistan, 2012)	
		Structure	The roof structure is structurally sound and is tied down to the walls securely to prevent up lift in high winds			
		Weather-proofing	The roof has a water-resistant finish		Use of thatch with plastic sheeting and mud plaster layer with final waterproofing layer made from lime plaster / bitumen mixture	Render mix to be verified
		Access	The roof is strong enough to take the load of people seeking refuge in a flood event			This will depend on the number of people it should support. Typical roof access load is 0.6kN/m^2 (BS 6399-1:1996 - Loading for buildings Code of practice for dead and imposed loads)

Safe and Resilient	Indicator	Variable	Qualitative Metric	Quantitative Metric	Baseline	Notes
	Adaptability	**Maintenance**	The shelter can be easily maintained using locally available materials and skills			
		Repair	The shelter can be easily repaired using locally available materials and skills			
		Modifications	The shelter design can be structurally and spatially adapted to changing needs and uses without the need to demolish or drastically change the overall structure			
		Tools	The beneficiaries / community have tools to enable them to maintain/ repair and modify their shelter			
		Training	Training programmes were provided to the local community to allow them to maintain/ repair and modify their shelter using available tools.			

Criteria	Indicator	Variable	Qualitative Metric	Quantitative Metric	Baseline	Notes
Acceptability	Comfort	**Thermal Comfort**	The shelter provides adequate protection from extremes of temperature.	Number of hours/ day the internal space is over a certain operative (average radiant and air) temperature.	The baseline operative temperature will need to be established - this may vary depending on location due to climate.	
		Lighting	The shelter has adequate natural light during the day to undertake household tasks	Number of hours/day the internal space of the shelter is over a certain (appropriate) luminance level.	The baseline appropriate luminance will need to be established.	
		Ventilation	Shelter has at least two windows / ventilators on different walls to allow air flow through the shelter			
	Space	**Size**	The shelter provides sufficient covered space to provide dignified accommodation	Floor area / person (ft^2/ person)	Baseline –3.5m^2 (37.5ft^2) / person) (Sphere Project, 2004)	
		Layout	The layout and design is appropriate for the local culture			
		Flexibility	The design of the shelter considers a flexible space use			

Criteria	Indicator	Variable	Qualitative Metric	Quantitative Metric	Baseline	Notes
Acceptability	Weatherproofing		The design of the shelter provides day to day protection from the climate			
	Protection	Security	Occupants feel their shelters are safe and secure			
		Privacy	Openings are designed so people are unable to see in to property			
	Health & Safety	Internal air quality	The shelter incorporates appropriate facilities for cooking	Estimate concentration of Carbon dioxide	ASHRAE 62.1-2010 (Standard for Ventilation for Acceptable Indoor Air Quality) limits carbon dioxide levels to 1000-1200 parts per million	
		Vector Control	All openings are protected. (Mosquito nets / fine wire mesh stretched out over doors, windows and ventilators) and there are no gaps within walls / roof.			
		Fire Hazards	Shelter has two means of escape			

Criteria	Indicator	Variable	Qualitative Metric	Quantitative Metric	Baseline	Notes
Sustainability	Cost	Building Element		Material Cost of each building element ($ or $/m^2)	All metrics require a baseline to assess shelters against	
		Construction		Labour Cost (Cost/day over X number of days)		
	Life Cycle Cost	Affordability of maintenance		Quantify Life Cycle cost		
		Non – Monetary cost of Maintenance				
	Local Supply chain	Availability of materials		Average distance for people to travel to source building materials (km)		
		Labour standards	Human rights are respected, harm to people is avoided and efforts are made to maximise the positive contribution of the project ensuring that human rights are met throughout the supply chain			
	Natural resources	Recycled/ Reused	The materials used in the shelter can be reused/ recycled			
		Embodied Energy		Carbon footprint for each building type with specific key features (measured in units of carbon dioxide/m^2)		

Appendix E

Document Register

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
1	09 Oct 2013	UN Habitat, NDMA	Map	Digital	Seismic_Zoning_and_Flood_Extend_2010_Map.pdf	2010	Other	As requested	Development Manual TCI	Arup (Team)	sharepoint	Map Number: UNH-PAK_Floods_v01
2	09 Oct 2013	Unknown	Excel File	Digital	1950-2011_Floods_Data.xlsx	unknown	Other	As requested	Floods 1950 - 2011 Pakistan	Arup (Team)	sharepoint	
3	09 Oct 2013	IOM?	Excel File	Digital	Early Recovery_2010_02-Apr-12.xlsx	2010?	Other	As requested	Pakistan Flood Shelter Cluster: Early Recovery Shelter Gap by PROVINCES Summary of ER Shelter Activities by Location	Arup (Team)	sharepoint	
4	09 Oct 2013	IOM	Excel File	Digital	SCDatabase_110331V2.xlsx	2010	Other	As requested	IOM Shelter Cluster Database	Arup (Team)	sharepoint	
5	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Shikarpur-20110226.jpg	Feb-11	Other	As requested	IASC - Pakistan Floods Shelter Cluster. Early Recovery Shelter Commitments - Sindh - Shikarpur	Arup (Team)	sharepoint	
6	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Kashmore-20110226.jpg	Feb-11	Other	As requested	IASC - Pakistan Floods Shelter Cluster. Early Recovery Shelter Commitments - Sindh - Kashmore	Arup (Team)	sharepoint	
7	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Jacobabad-2011026.jpg		Other	As requested	IASC - Pakistan Floods Shelter Cluster. Early Recovery Shelter Commitments - Sindh - Shikarpur	Arup (Team)	sharepoint	
8	09 Oct 2013	Unknown	Other	PDF	dfid shelter kit-draft6.pdf	Sep-09	Other	As requested	Tent assembly manual	Arup (Team)	sharepoint	
9	09 Oct 2013	IOM	Excel File	Digital	DRAFT-30-01-2010NFI-list.xlsx	Aug-10	Other	As requested	Family shelter requirements	Arup (Team)	sharepoint	
10	09 Oct 2013	UN Habitat, NDMA	Drawing	Digital	habitat1 DIM.jpg	Aug-10	Other	As requested	Tent diagram	Arup (Team)	sharepoint	
11	09 Oct 2013	UN Habitat, NDMA	Drawing	Digital	habitat2DIM.jpg	Aug-10	Other	As requested	Tent diagram	Arup (Team)	sharepoint	
12	09 Oct 2013	Unknown	Other	Digital	image002.jpg	Aug-10	Other	As requested	Photograph of camp	Arup (Team)	sharepoint	
13	09 Oct 2013	IOM	Report	Digital	shelter technical strategy.docx	Aug-10	Other	As requested	Compilation of shelter kits delivered in Pakistan or stockpiled by major organisations	Arup (Team)	sharepoint	
14	09 Oct 2013	IOM?	Word Doc	Digital	CARE-NFIs-Kitchen Sets & Hygeine Kits.docx	Aug-10	Other	As requested	Order sheet for kitchen sets	Arup (Team)	sharepoint	
15	09 Oct 2013	IOM	Other	Digital	Banners 1.jpg	Aug-10	Other	As requested	Camp rules/procedures banner	Arup (Team)	sharepoint	
16	09 Oct 2013	IOM	Other	Digital	Banners 2.jpg	Aug-10	Other	As requested	Camp rules/procedures banner	Arup (Team)	sharepoint	
17	09 Oct 2013	IOM	Other	PDF	Banners_Sindhi.pdf	Aug-10	Other	As requested	Camp rules/procedures banner (Sindhi)	Arup (Team)	sharepoint	
18	09 Oct 2013	IOM	Other	PDF	Banners_Urdu.pdf	Aug-10	Other	As requested	Camp rules/procedures banner (Urdu)	Arup (Team)	sharepoint	
19	09 Oct 2013	IOM	Other	Digital	Banners 2.jpg	Aug-10	Other	As requested	Camp rules/procedures banner (Sindhi)	Arup (Team)	sharepoint	
20	09 Oct 2013	IOM	Other	Digital	Banners1.jpg	Aug-10	Other	As requested	Camp rules/procedures banner (Sindhi)	Arup (Team)	sharepoint	
21	09 Oct 2013	UN Habitat, NDMA	Other	PDF	Adobe Draft.pdf	Feb-11	Other	As requested	Make your new house safe against flood - reccommendations for Adobe house	Arup (Team)	sharepoint	
22	09 Oct 2013	UN Habitat, NDMA	Other	PDF	Earthan guidelines - 30DEC2010.pdf	Feb-11	Other	As requested	Technical Specification for Earthen buildings in flood affected areas for one storey height	Arup (Team)	sharepoint	
23	09 Oct 2013	UN Habitat, NDMA	Other	PDF	Loh Kaat guidelines - 30DEC2010.pdf	Feb-11	Other	As requested	Technical Specification for Loh Kat (Timber Pole) House in Flood Affected Areas for Single Storey	Arup (Team)	sharepoint	
24	09 Oct 2013	UN Habitat, NDMA	Other	PDF	Loh Kaat Draft.pdf	Feb-11	Other	As requested	Make your new house safe against flood - reccommendations for Loh-Kaat house	Arup (Team)	sharepoint	
25	09 Oct 2013	UN Habitat, NDMA	Other	PDF	Masonry guidelines - 30DEC2010.pdf	Feb-11	Other	As requested	Technical Specification for masonry house in flood affected areas up to two storey height.	Arup (Team)	sharepoint	
26	09 Oct 2013	UN Habitat, NDMA	Other	PDF	Mud DRAFT.pdf	Feb-11	Other	As requested	Make your new house safe against flood - reccommendations for single storey mud house	Arup (Team)	sharepoint	
27	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	Overview of desgin options 011210 (2).xlsx	Feb-11	Other	As requested	Overview of design options for houses in flood prone areas in Pakistan	Arup (Team)	sharepoint	
28	09 Oct 2013	UN Habitat, NDMA	Drawing	Digital	English Poster.jpg	Jan-11	Other	As requested	How do I protect my house against floods diagram	Arup (Team)	sharepoint	
29	09 Oct 2013	IOM	Report	PDF	FAQs_Shelter.pdf	Nov-10	Other	As requested	FAQs - Shelter Support for the field staff of the humanitarian community	Arup (Team)	sharepoint	
30	09 Oct 2013	IASC	Drawing	Digital	ORS_English_Poster.jpg	Feb-11	Other	As requested	How do I protect my house against floods diagram	Arup (Team)	sharepoint	
31	09 Oct 2013	IASC	Drawing	Digital	ORS_Urdu_Poster_101220.jpg	Dec-10	Other	As requested	How do I protect my house against floods diagram (Urdu)	Arup (Team)	sharepoint	
32	09 Oct 2013	Unknown	Other	Digital	Poster circlon.jpg	Nov-10	Other	As requested	House building advice poster	Arup (Team)	sharepoint	
33	09 Oct 2013	IASC	Other	Digital	poster final 4low res.jpg	Dec-10	Other	As requested	How do I protect my house against floods (unannotated picture)	Arup (Team)	sharepoint	
34	09 Oct 2013	UN Habitat, NDMA	Word Doc	Digital	101028_UNH_How_Built_Back_Safer_draft_for TWIG.docx	Oct-10	Other	As requested	Matrix for Outreach Message: How to Build Back Safe	Arup (Team)	sharepoint	
35	09 Oct 2013	UN Habitat, NDMA	Word Doc	Digital	101028_UNH_Plinth_for ShCl_TWIG.docx	Oct-10	Other	As requested	How to Build Back Safer - 1st draft	Arup (Team)	sharepoint	
36	09 Oct 2013	UN Habitat, NDMA	Report	PDF	Bhatar handout 28.4.07.pdf	Apr-07	Other	As requested	Bhatar construction - An illustrated guide for craftsmen (draft for revision)	Arup (Team)	sharepoint	
37	09 Oct 2013	UN Habitat, NDMA	Other	PDF	dhajji lesson compressed Kopie.pdf	Dec-06	Other	As requested	Basic Training on Dhajji construction (PPT lesson)	Arup (Team)	sharepoint	
38	09 Oct 2013	Unknown	Other	PDF	Reconstruction after Earthquakes H. Gloor.pdf	Apr-10	Other	As requested	Long-term Reconstruction towards Prevention - Obtsacles and Opportunities	Arup (Team)	sharepoint	
39	09 Oct 2013	UN Habitat, NDMA	Other	Digital	01 Adobe - 04MAY2011.jpg	Mar-13	Other	As requested	Adobe house poster	Arup (Team)	sharepoint	
40	09 Oct 2013	UN Habitat, NDMA	Other	Digital	01 Adobe - 04MAY2011-sm.jpg	Mar-13	Other	As requested	Adobe house poster (thumbnail)	Arup (Team)	sharepoint	
41	09 Oct 2013	UN Habitat, NDMA	Other	Digital	02 Mud - 04MAY2011.jpg	Mar-13	Other	As requested	Mud house poster	Arup (Team)	sharepoint	
42	09 Oct 2013	UN Habitat, NDMA	Other	Digital	02 Mud - 04MAY2011-sm.jpg	Mar-13	Other	As requested	Mud house poster (thumbnail)	Arup (Team)	sharepoint	
43	09 Oct 2013	UN Habitat, NDMA	Other	Digital	03 Brick masonry - 04MAY2011.jpg	Mar-13	Other	As requested	Brick house poster	Arup (Team)	sharepoint	
44	09 Oct 2013	UN Habitat, NDMA	Other	Digital	04 Loh Kat - 04MAY2011.jpg	Mar-13	Other	As requested	Loh Kat house poster	Arup (Team)	sharepoint	
45	09 Oct 2013	UN Habitat, NDMA	Other	Digital	04 Loh Kat - 04MAY2011-sm.jpg	Mar-13	Other	As requested	Loh Kat house poster	Arup (Team)	sharepoint	
46	09 Oct 2013	UN Habitat, NDMA	Drawing	Digital	ORS_English_Poster_Medium.jpg	Mar-13	Other	As requested	How do I protect my house against floods diagram	Arup (Team)	sharepoint	
47	09 Oct 2013	IASC	Report	PDF	ACTED punjab.pdf	Feb-11	Other	As requested	Early recovery shelter planning template	Arup (Team)	sharepoint	
48	09 Oct 2013	UN Habitat, NDMA	Other	Digital	ACTED Tshelter KPK - 2010.docx	Nov-10	Other	As requested	PHOTOS ACTED-UNHCR T SHELTER	Arup (Team)	sharepoint	
49	09 Oct 2013	ACTED	Report	PDF	ACTED-GTZ-House-comp.pdf	Nov-10	Other	As requested	Cost estimate for one room house (cover area 23.76 sq.m)	Arup (Team)	sharepoint	
50	09 Oct 2013	ACTED	Drawing	PDF	column section for one room house.pdf	Nov-10	Other	As requested	Column x-section and vertical section	Arup (Team)	sharepoint	
51	09 Oct 2013	ACTED	Drawing	PDF	LIntel beam section for one room house.pdf	Nov-10	Other	As requested	Lintel beam x-section	Arup (Team)	sharepoint	
52	09 Oct 2013	ACTED	Drawing	PDF	One room house elevation.pdf	Nov-10	Other	As requested	One room house elevation	Arup (Team)	sharepoint	
53	09 Oct 2013	ACTED	Drawing	PDF	One room Latrine.pdf	Nov-10	Other	As requested	Latrine drawings	Arup (Team)	sharepoint	
54	09 Oct 2013	ACTED	Drawing	PDF	Plinth beam section for one room house.pdf	Nov-10	Other	As requested	Plinth beam x-section	Arup (Team)	sharepoint	
55	09 Oct 2013	ACTED	Drawing	PDF	Revised drawings for one room house.pdf	Nov-10	Other	As requested	One room house drawings	Arup (Team)	sharepoint	
56	09 Oct 2013	ACTED	Drawing	PDF	Revised Elevation for onre room house.pdf	Nov-10	Other	As requested	One room house elevation	Arup (Team)	sharepoint	
57	09 Oct 2013	ACTED	Drawing	PDF	Revised Plan for one room house.pdf	Nov-10	Other	As requested	One room house plan	Arup (Team)	sharepoint	
58	09 Oct 2013	ACTED	Drawing	PDF	Revised section for one room house.pdf	Nov-10	Other	As requested	One room house section A-A	Arup (Team)	sharepoint	
59	09 Oct 2013	ACTED	Drawing	PDF	Roof Beam X-Section for one room house.pdf	Nov-10	Other	As requested	Roof beam x-section	Arup (Team)	sharepoint	
60	09 Oct 2013	AKPBSP	Other	Digital	20101210.jpg	Feb-11	Other	As requested	Photograph of wooden frame house	Arup (Team)	sharepoint	
61	09 Oct 2013	ARC International	Word Doc	Digital	ARC ER Compliation.doc	Dec-10	Other	As requested	Early recovery shelter planning template	Arup (Team)	sharepoint	
62	09 Oct 2013	ARC International	Other	PDF	ARC ER Compliation.doc	Dec-10	Other	As requested	Early recovery shelter planning template	Arup (Team)	sharepoint	
63	09 Oct 2013	ARC International	Drawing	PDF	Earthquake 2008 Shelter Design Drawings.pdf	Aug-10	Other	As requested	Shelter design drawings	Arup (Team)	sharepoint	
64	09 Oct 2013	ARC International	Drawing	Digital	Shelter Design-Drawing Flood Sibbi.pdf	Aug-10	Other	As requested	Shelter outline drawings	Arup (Team)	sharepoint	
65	09 Oct 2013	ARC International	Other	Digital	Shelter Presentation ARC-International.ppt	Aug-10	Other	As requested	ARC - Shelter Program: Experience Sharing	Arup (Team)	sharepoint	
66	09 Oct 2013	CARE	Excel File	Digital	UC's for CBHA.xlsx	Feb-11	Other	As requested	CBHA Project - Union Council Level Data on Planned Implementation	Arup (Team)	sharepoint	
67	09 Oct 2013	CARE	Excel File	Digital	5 x 4 BRewised Shelter BOQ with current matrial rate.xls	Feb-11	Other	As requested	Cost summary for unit shelter	Arup (Team)	sharepoint	
68	09 Oct 2013	CARE	Drawing	Digital	elevation.pdf	Feb-11	Other	As requested	Room and kitchen elevation / toilet elevation	Arup (Team)	sharepoint	
69	09 Oct 2013	CARE	Drawing	Digital	Plan.pdf	Feb-11	Other	As requested	Shelter floorplan	Arup (Team)	sharepoint	
70	09 Oct 2013	CARE	Report	PDF	Load bearing capacity Geotechnical_Investigation_Report[1].pdf	Feb-11	Other	As requested	DAANISH SCHOOL SYSTEM MUZAFFARGARH GEOTECHNICAL INVESTIGATION REPORT	Arup (Team)	sharepoint	
71	09 Oct 2013	CARE	Word Doc	Digital	Structural analysis Calculations revised -01.docx	Feb-11	Other	As requested	Structural Calculations for Model Shelter	Arup (Team)	sharepoint	
72	09 Oct 2013	Cordaid	Word Doc	Digital	Cordaid_13-12-2010__Modality_of_implementation.docx	Feb-11	Other	As requested	Construction of Semi permanent Shelter and Latrine: Modality of implementation, step and activity.	Arup (Team)	sharepoint	
73	09 Oct 2013	CraTerre	Word Doc	Digital	Olivier_Moles_Flyer_English_Craterre.doc	Feb-11	Other	As requested	Guidance: Take into consideration the local construction cultures for a greater efficiency in the housing programs	Arup (Team)	sharepoint	
74	09 Oct 2013	CraTerre	Word Doc	Digital	Olivier_Moles_Jan_Email_ORS_Design.doc.docx	Feb-11	Other	As requested	Letter from Oliver Moles at CRAterre-ENSAG	Arup (Team)	sharepoint	
75	09 Oct 2013	CRS	Word Doc	Digital	Shelter Construction Guidelines (with pics)1.doc	Feb-11	Other	As requested	Critical Construction Points for Transitional Shelter	Arup (Team)	sharepoint	
76	09 Oct 2013	CRS	Other	Digital	Demo Pic at Manjho Shori 018.jpg	Feb-11	Other	As requested	Photo inside shelter Manjho Shori	Arup (Team)	sharepoint	
77	09 Oct 2013	CRS	Other	Digital	Demo Pic at Manjho Shori 020.jpg	Feb-11	Other	As requested	Photo outside shelter Manjho Shori	Arup (Team)	sharepoint	
78	09 Oct 2013	CRS	Other	Digital	Demo Pic at Manjho Shori 020.jpg	Feb-11	Other	As requested	Photo of roofing beams	Arup (Team)	sharepoint	
79	09 Oct 2013	CRS	Other	Digital	DSC00499.JPG	Feb-11	Other	As requested	Photo of construction process	Arup (Team)	sharepoint	
80	09 Oct 2013	CRS	Other	Digital	DSC06365.JPG	Feb-11	Other	As requested	Photo of completed shelter	Arup (Team)	sharepoint	
81	09 Oct 2013	CRS	Other	Digital	shelter Community make it permanent.jpg	Feb-11	Other	As requested	Photo of completed shelter	Arup (Team)	sharepoint	
82	09 Oct 2013	Emergency Architects	Drawing	PDF	Design shelter Emergency Architects.pdf	Feb-11	Other	As requested	Shelter model - photograph and plans	Arup (Team)	sharepoint	
83	09 Oct 2013	Handicap International	Word Doc	Digital	HI Shelter Technical Description.doc	Mar-11	Other	As requested	Technical Description – Transitional Shelter (125 u)	Arup (Team)	sharepoint	
84	09 Oct 2013	Handicap International	Other	Digital	image003.jpg	Mar-11	Other	As requested	Shelter list	Arup (Team)	sharepoint	
85	09 Oct 2013	Handicap International	Calculation	PDF	B.O.Q - Shelter.pdf	Mar-11	Other	As requested	Emergency intervention to save lives of flood-affected populations in Pakistan, Sindh province - B.O.Q FOR TRANSITIONAL SHELTER (2 ROOMS)	Arup (Team)	sharepoint	
86	09 Oct 2013	Handicap International	Drawing	Digital	Shelter HI.jpg	Mar-11	Other	As requested	Shelter response to flood-affected populations in Sindh province - render	Arup (Team)	sharepoint	
87	09 Oct 2013	Handicap International	Drawing	Digital	Shelter Work Phases - A4.jpg	Mar-11	Other	As requested	Shelter response to flood-affected populations in Sindh province - construction process	Arup (Team)	sharepoint	

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
88	09 Oct 2013	Heritage Foundation	Report	Digital	Green KaravanGhar 100906[1].docx	Nov-10	Other	As requested	BUILDING OF GUIDED SELF-HELP SHELTERS – The Green KaravanGhar	Arup (Team)	sharepoint	
89	09 Oct 2013	Heritage Foundation	Word Doc	Digital	Heritage ER Compilation.doc	Dec-10	Other	As requested	EARLY RECOVERY SHELTER PLANNING TEMPLATE	Arup (Team)	sharepoint	
90	09 Oct 2013	Heritage Foundation	Other	PDF	Heritage ER Compilation.doc	Dec-10	Other	As requested	EARLY RECOVERY SHELTER PLANNING TEMPLATE	Arup (Team)	sharepoint	
91	09 Oct 2013	Heritage Foundation	Report	PDF	Heritage Foundation_doc.pdf	Nov-10	Other	As requested	BUILDING OF GUIDED SELF-HELP SHELTERS – The Green KaravanGhar	Arup (Team)	sharepoint	
92	09 Oct 2013	Heritage Foundation	Other	PDF	Heritage Foundation_pic.pdf	Nov-10	Other	As requested	Photo: Construction at HF Field Camp, Marghazar, Swat	Arup (Team)	sharepoint	
93	09 Oct 2013	Heritage Foundation	Other	Digital	Heritage Foundation_Swat Demo GKG 100906.pptx	Nov-10	Other	As requested	Slideshow: Construction at HF Field Camp, Marghazar, Swat	Arup (Team)	sharepoint	
94	09 Oct 2013	Heritage Foundation	Report	PDF	Heritage Foundation-comp.pdf	Nov-10	Other	As requested	Case study and photos: BUILDING OF GUIDED SELF-HELP SHELTERS – The Green KaravanGhar	Arup (Team)	sharepoint	
95	09 Oct 2013	IOM	Excel File	Digital	IOM Planned Implementation.xls	Feb-11	Other	As requested	Table of shelter commitments	Arup (Team)	sharepoint	
96	09 Oct 2013	IOM	Report	PDF	IOM_Balochistan2008.pdf	Sep-10	Other	As requested	Transitional Shelter Construction Process Baluchistan Earthquake Response November 2008	Arup (Team)	sharepoint	
97	09 Oct 2013	IOM	Other	PDF	IOM_Shelter program Process FlowChart.pdf	Feb-11	Other	As requested	IOM One Room Shelter Program -Administrative Setup	Arup (Team)	sharepoint	
98	09 Oct 2013	Islamic Relief	Word Doc	Digital	Islamic Relief ER Compilation.doc	Dec-10	Other	As requested	EARLY RECOVERY SHELTER PLANNING TEMPLATE - Neelum	Arup (Team)	sharepoint	
99	09 Oct 2013	Islamic Relief	Other	PDF	Islamic Relief ER Compilation.pdf	Dec-10	Other	As requested	EARLY RECOVERY SHELTER PLANNING TEMPLATE - Neelum	Arup (Team)	sharepoint	
100	09 Oct 2013	Islamic Relief	Drawing	Digital	Transitional Shelter for Neelum AJK.doc	Jan-11	Other	As requested	Islamic Relief-Pakistan: LOW COST SHELTER	Arup (Team)	sharepoint	
101	09 Oct 2013	Islamic Relief	Report	Digital	TransitionalShelter - Neelum - AJK.doc	Nov-10	Other	As requested	Pakistan Flood Response 2010 Emergency Assistance For Flood Affected Families Pakistan: Emergency Proposal	Arup (Team)	sharepoint	
102	09 Oct 2013	Islamic Relief	Excel File	Digital	Weekly Report.xlsx	Jan-11	Other	As requested	Shelter Progress Report	Arup (Team)	sharepoint	
103	09 Oct 2013	Islamic Relief	Excel File	Digital	BOQs Core Shelter (One Room) (KPK) & Punjab.xlsx	Jan-11	Other	As requested	Estimated Bill of Quantities-Core Shelter	Arup (Team)	sharepoint	
104	09 Oct 2013	Islamic Relief	Excel File	Digital	BOQs Core Shelter (One Room) (KPK).xlsx	Nov-10	Other	As requested	Estimated Bill of Quantities-Core Shelter	Arup (Team)	sharepoint	
105	09 Oct 2013	Islamic Relief	Excel File	Digital	Shalter BOQ for Sindh & Balochistan.xlsx	Jan-11	Other	As requested	BoQ (Sindh Shelter Programme)	Arup (Team)	sharepoint	
106	09 Oct 2013	Islamic Relief	Drawing	Digital	Cross Section Shelter.jpg	Nov-10	Other	As requested	X-section of house hold room shelter project	Arup (Team)	sharepoint	
107	09 Oct 2013	Islamic Relief	Drawing	Digital	Lay Out Shelter.jpg	Nov-10	Other	As requested	Plan of house hold room - shelter project	Arup (Team)	sharepoint	
108	09 Oct 2013	Islamic Relief	Drawing	PDF	One Room Shelter drawing Modified KPK & Punjab.pdf	Dec-10	Other	As requested	Plan and section house hold room shelter project	Arup (Team)	sharepoint	
109	09 Oct 2013	Islamic Relief	Drawing	Digital	Plinth Plan 1 Sindh.png	Jan-11	Other	As requested	Floor plan plinth	Arup (Team)	sharepoint	
110	09 Oct 2013	Islamic Relief	Drawing	Digital	Plinth Plan 2 Sindh.png	Jan-11	Other	As requested	Render plinth	Arup (Team)	sharepoint	
111	09 Oct 2013	Islamic Relief	Drawing	Digital	Sindh Shelter Design.png	Jan-11	Other	As requested	Shelter full render	Arup (Team)	sharepoint	
112	09 Oct 2013	Islamic Relief	Drawing	Digital	3D view Shelter KPK.jpg	Dec-10	Other	As requested	RCC Structure - render	Arup (Team)	sharepoint	
113	09 Oct 2013	KIND	Calculation	PDF	KIND ER BoQ.pdf	Dec-10	Other	As requested	EARLY RECOVERY SHELTER BoQ: One room 28 sq m	Arup (Team)	sharepoint	
114	09 Oct 2013	KIND	Excel File	Digital	KIND ER BoQ.xls	Nov-10	Other	As requested	EARLY RECOVERY SHELTER BoQ: One room 28 sq m	Arup (Team)	sharepoint	
115	09 Oct 2013	KIND	Word Doc	Digital	KIND ER Compilation.doc	Dec-10	Other	As requested	EARLY RECOVERY SHELTER PLANNING TEMPLATE: KIND	Arup (Team)	sharepoint	
116	09 Oct 2013	KIND	Other	PDF	KIND ER Compilation.pdf	Dec-10	Other	As requested	EARLY RECOVERY SHELTER PLANNING TEMPLATE: KIND	Arup (Team)	sharepoint	
117	09 Oct 2013	KIND	Word Doc	Digital	KIND ER Planning.doc	Nov-10	Other	As requested	EARLY RECOVERY SHELTER PLANNING TEMPLATE: KIND	Arup (Team)	sharepoint	
118	09 Oct 2013	MSF	Report	PDF	MSF Temporary Shelter-Instructions.pdf	Mar-11	Other	As requested	How to erect a Temporary Bamboo Shelter: Step-by-step Guide	Arup (Team)	sharepoint	
119	09 Oct 2013	NRSP	Word Doc	Digital	NRSP ER Compilation.doc	Dec-10	Other	As requested	EARLY RECOVERY SHELTER PLANNING TEMPLATE: NRSP	Arup (Team)	sharepoint	
120	09 Oct 2013	NRSP	Other	PDF	NRSP ER Compilation.pdf	Dec-10	Other	As requested	EARLY RECOVERY SHELTER PLANNING TEMPLATE: NRSP	Arup (Team)	sharepoint	
121	09 Oct 2013	NRSP	Word Doc	Digital	NRSP-TORs-Donors_Housing Rehab--Oct15-10.doc	Nov-10	Other	As requested	Terms of Reference For Donors Interested in Supporting - Community/Owner Driven reconstruction & rehabilitation of Floods affected Rural Housing	Arup (Team)	sharepoint	
122	09 Oct 2013	People in Need	Word Doc	Digital	People_In_Need_ORS_DesignModification.docx	Feb-11	Other	As requested	Letter from Martin Vylicil with revised technical spec	Arup (Team)	sharepoint	
123	09 Oct 2013	People in Need	Excel File	Digital	Detail BOQ.xlsx	Feb-11	Other	As requested	Room internal size 18 feet x 15 feet with 10 Column (9"x9")	Arup (Team)	sharepoint	
124	09 Oct 2013	People in Need	Drawing	PDF	01 Ground Floor - PIN design of shelter for Nowshera Rapid.pdf	Feb-11	Other	As requested	Ground floor plan	Arup (Team)	sharepoint	
125	09 Oct 2013	People in Need	Drawing	PDF	02 Section A-A' - PIN design of shelter for Nowshera Rapid.pdf	Feb-11	Other	As requested	X-section A-A'	Arup (Team)	sharepoint	
126	09 Oct 2013	People in Need	Drawing	PDF	03 Section B-B' - PIN design of shelter for Nowshera Rapid.pdf	Feb-11	Other	As requested	X-section B-B'	Arup (Team)	sharepoint	
127	09 Oct 2013	People in Need	Drawing	PDF	04 Front View - PIN design of shelter for Nowshera Rapid.pdf	Feb-11	Other	As requested	Front view scale drawing	Arup (Team)	sharepoint	
128	09 Oct 2013	People in Need	Drawing	PDF	05 Side View - PIN design of shelter for Nowshera Rapid.pdf	Feb-11	Other	As requested	Side view scale drawing	Arup (Team)	sharepoint	
129	09 Oct 2013	People in Need	Drawing	PDF	06 Back View - PIN design of shelter for Nowshera Rapid.pdf	Feb-11	Other	As requested	Back view scale drawing	Arup (Team)	sharepoint	
130	09 Oct 2013	IASC	Word Doc	Digital	Qatar Charity ER Compilation.doc	Dec-10	Other	As requested	Early recovery shelter planning template: Qatar charity	Arup (Team)	sharepoint	
131	09 Oct 2013	IASC	Other	PDF	Qatar Charity ER Compilation.doc	Dec-10	Other	As requested	Early recovery shelter planning template: Qatar charity	Arup (Team)	sharepoint	
132	09 Oct 2013	Qatar Charity	Drawing	PDF	A-Drawing Low cost shelter Plan.pdf	Nov-10	Other	As requested	Design of transitional shelter for flood affectees	Arup (Team)	sharepoint	
133	09 Oct 2013	Qatar Charity	Drawing	PDF	B-Drawing Low cost shelter Sectional details.pdf	Nov-10	Other	As requested	Design of transitional shelter for flood affectees: x-section	Arup (Team)	sharepoint	
134	09 Oct 2013	Qatar Charity	Drawing	PDF	C-Drawing Low cost shelter top roof crossing.pdf	Nov-10	Other	As requested	Design of transitional shelter for flood affectees: roof crossing details	Arup (Team)	sharepoint	
135	09 Oct 2013	Qatar Charity	Other	PDF	D-QATAR CHARITY description.pdf	Nov-10	Other	As requested	Qatar Charity One room shelter: key features	Arup (Team)	sharepoint	
136	09 Oct 2013	Qatar Charity	Word Doc	Digital	D-QATAR CHARITY description.doc	Nov-10	Other	As requested	Qatar Charity One room shelter: key features	Arup (Team)	sharepoint	
137	09 Oct 2013	Relief international	Other	PDF	Relief Int. ER Compilation.pdf	Dec-10	Other	As requested	Early recovery shelter planning template: Relief international	Arup (Team)	sharepoint	
138	09 Oct 2013	Relief international	Word Doc	Digital	Relief International ER Compilation.doc	Dec-10	Other	As requested	Early recovery shelter planning template: Relief international	Arup (Team)	sharepoint	
139	09 Oct 2013	Relief international	Excel File	Digital	BOQ SHELTER.xls	Nov-10	Other	As requested	BOQ & COST ESTIMATE FOR EMERGENCY SHELTER MADE OF LOCAL MATERIALS	Arup (Team)	sharepoint	
140	09 Oct 2013	Relief international	Drawing	PDF	Shelter Floor Plan.pdf	Nov-10	Other	As requested	Shelter Floor Plan	Arup (Team)	sharepoint	
141	09 Oct 2013	Relief international	Drawing	PDF	Shelter Front View.pdf	Nov-10	Other	As requested	Shelter Front View	Arup (Team)	sharepoint	
142	09 Oct 2013	Relief international	Drawing	PDF	Shelter Roof Beams Plan.pdf	Nov-10	Other	As requested	Shelter Roof Beams Plan	Arup (Team)	sharepoint	
143	09 Oct 2013	Relief international	Drawing	PDF	Shelter Roof for Fales truss.pdf	Nov-10	Other	As requested	Shelter roof for Fales truss purlins made with reed	Arup (Team)	sharepoint	
144	09 Oct 2013	Relief international	Drawing	PDF	Shelter Section .pdf	Nov-10	Other	As requested	Shelter section	Arup (Team)	sharepoint	
145	09 Oct 2013	Relief international	Drawing	PDF	Shelter Side View .pdf	Nov-10	Other	As requested	Shelter side view	Arup (Team)	sharepoint	
146	09 Oct 2013	Save the Children	Other	PDF	ER_SavetheChildren_Compilation.pdf	Feb-11	Other	As requested	Early recovery shelter planning template: Save the Children	Arup (Team)	sharepoint	
147	09 Oct 2013	Save the Children	Excel File	Digital	BOQ for shelter (Shelter IM's conflicted copy 2010-12-13).xls	Oct-10	Other	As requested	BOQ for Shelter Construction Material for Flood Affected areas of Sindh and Punjab provinces	Arup (Team)	sharepoint	
148	09 Oct 2013	Save the Children	Excel File	Digital	BOQ for shelter.xls	Oct-10	Other	As requested	BOQ for Shelter Construction Material for Flood Affected areas of Sindh and Punjab provinces	Arup (Team)	sharepoint	
149	09 Oct 2013	Save the Children	Drawing	PDF	Shelter drawing.pdf	Nov-10	Other	As requested	Shelter plan and drawing	Arup (Team)	sharepoint	
150	09 Oct 2013	Save the Children	Other	Digital	DSC00129.JPG	Oct-10	Other	As requested	Photo of shelter construction	Arup (Team)	sharepoint	
151	09 Oct 2013	Save the Children	Other	Digital	DSC00131.JPG	Oct-10	Other	As requested	Photo of shelter construction	Arup (Team)	sharepoint	
152	09 Oct 2013	Save the Children	Other	Digital	DSC00137.JPG	Oct-10	Other	As requested	Photo of roof erection	Arup (Team)	sharepoint	
153	09 Oct 2013	Save the Children	Other	Digital	DSC00138.JPG	Oct-10	Other	As requested	Photo of roof erection	Arup (Team)	sharepoint	
154	09 Oct 2013	Save the Children	Other	Digital	DSC00152.JPG	Oct-10	Other	As requested	Photo of wall assembly	Arup (Team)	sharepoint	
155	09 Oct 2013	Save the Children	Other	Digital	DSC00156.JPG	Oct-10	Other	As requested	Photo of wall assembly	Arup (Team)	sharepoint	
156	09 Oct 2013	Save the Children	Other	Digital	DSC00161.JPG	Oct-10	Other	As requested	Photo of roof lining installation	Arup (Team)	sharepoint	
157	09 Oct 2013	Save the Children	Other	Digital	DSC00176.JPG	Oct-10	Other	As requested	Photo of shelter construction	Arup (Team)	sharepoint	
158	09 Oct 2013	Save the Children	Other	Digital	DSC00181.JPG	Oct-10	Other	As requested	Photo of shelter nearing construction	Arup (Team)	sharepoint	
159	09 Oct 2013	Save the Children	Other	Digital	DSC00183.JPG	Oct-10	Other	As requested	Photo of wall lining installation	Arup (Team)	sharepoint	
160	09 Oct 2013	Save the Children	Other	Digital	DSC00191.JPG	Oct-10	Other	As requested	Photo of wall lining arrival	Arup (Team)	sharepoint	
161	09 Oct 2013	Save the Children	Other	Digital	DSC00205.JPG	Oct-10	Other	As requested	Photo of floor work	Arup (Team)	sharepoint	
162	09 Oct 2013	Save the Children	Other	Digital	DSC00223.JPG	Oct-10	Other	As requested	Photo of shelter in the rain	Arup (Team)	sharepoint	
163	09 Oct 2013	Save the Children	Other	Digital	DSC00256.JPG	Oct-10	Other	As requested	Photo of roof beams (detail)	Arup (Team)	sharepoint	
164	09 Oct 2013	SBDDS	Word Doc	Digital	ER Planning Template1.doc	Mar-11	Other	As requested	Early recovery shelter planning template: SBDDS	Arup (Team)	sharepoint	
165	09 Oct 2013	SBDDS	Word Doc	Digital	Profile of SBDDS.doc	Mar-11	Other	As requested	SBDDS - about us	Arup (Team)	sharepoint	
166	09 Oct 2013	SBDDS	Drawing	Digital	2 room.jpg	Mar-11	Other	As requested	2 room shelter floorplan	Arup (Team)	sharepoint	
167	09 Oct 2013	Secours Islamique FR	Word Doc	Digital	ER Planning Template1.doc	Mar-11	Other	As requested	Early recovery shelter planning template: Secours Islamique France SIF	Arup (Team)	sharepoint	
168	09 Oct 2013	Secours Islamique FR	Excel File	Digital	Sindh GOZO Shelter project - BoQ.xls	Feb-11	Other	As requested	One Room Shelter Permanet Srtucture Detail: Room Size 18x14x11	Arup (Team)	sharepoint	
169	09 Oct 2013	Secours Islamique FR	Excel File	Digital	Sindh GOZO Shelter Project - Training, tools kits & contribution -Feb 2011.xls	Feb-11	Other	As requested	Gozo cash for work detail	Arup (Team)	sharepoint	
170	09 Oct 2013	Secours Islamique FR	Excel File	PDF	Gozo Shelter DESIGN- Feb 11- Annex 4.pdf	Feb-11	Other	As requested	SIF DESIGN FOR ONE ROOM SHELTER (PERMANENT STRUCTURE) - Foundation Plan	Arup (Team)	sharepoint	
171	09 Oct 2013	Solidar	Other	PDF	SLA compilation.pdf	Dec-10	Other	As requested	Early recovery shelter planning template: Swiss Labour Assistance	Arup (Team)	sharepoint	
172	09 Oct 2013	Solidar	Other	PDF	BoQ modified Sanitation Facility bamboo 10.11.18.pdf	Nov-10	Other	As requested	Modified Bill of Quantities for Latrine and Bathing Space (Single Unit)	Arup (Team)	sharepoint	
173	09 Oct 2013	Solidar	Other	PDF	BoQ modified TShelter bamboo 10.11.18.pdf	Nov-10	Other	As requested	Modified Bill of Quantities for Tranditional Shelter (Single Unit)	Arup (Team)	sharepoint	

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
174	09 Oct 2013	Solidar	Other	PDF	BoQ one-room Shelter, incl. transp. & without prices 11.03.06.pdf	Mar-11	Other	As requested	BoQ-One Room Shelter & Sanitation Layyah, Punjab - quantities needed	Arup (Team)	sharepoint	
175	09 Oct 2013	Solidar	Drawing	Digital	Annex IIIa_Floor Plan & Front Elevation 11.02.23.jpg	Mar-11	Other	As requested	One-Room Shelter for Layyah - front elevation and floor plan	Arup (Team)	sharepoint	
176	09 Oct 2013	Solidar	Drawing	Digital	Annex IIIb_Elevations & Sections 11.02.23.jpg	Mar-11	Other	As requested	One-Room Shelter for Layyah - elevations and x-sections	Arup (Team)	sharepoint	
177	09 Oct 2013	Solidar	Drawing	Digital	Annex IIIc_Section + Roof 11.02.19.jpg	Mar-11	Other	As requested	One-Room Shelter for Layyah - roof x-sections	Arup (Team)	sharepoint	
178	09 Oct 2013	Solidar	Drawing	Digital	Annex IIId_Foundation, roof & connections 11.02.23.jpg	Mar-11	Other	As requested	One-Room Shelter for Layyah - roof-walls connection details & foundation details	Arup (Team)	sharepoint	
179	09 Oct 2013	Solidar	Drawing	Digital	Annex IIIe_window option 11.02.23.jpg	Mar-11	Other	As requested	One-Room Shelter for Layyah - window placement options	Arup (Team)	sharepoint	
180	09 Oct 2013	Solidar	Drawing	Digital	Annex IIIf_Sanitation facility 11.02.23.jpg	Mar-11	Other	As requested	Sanitation facility for Layyah - plans	Arup (Team)	sharepoint	
181	09 Oct 2013	Solidar	Drawing	PDF	Annex V_Sanit. Facility Drawing 10.08.30.pdf	Nov-10	Other	As requested	Latrine x-sections and plans	Arup (Team)	sharepoint	
182	09 Oct 2013	Solidar	Drawing	PDF	Annex V_TShelter Drawing (Bambo) 10.08.30	Nov-10	Other	As requested	Transitional shelter plans and elevations	Arup (Team)	sharepoint	
183	09 Oct 2013	Solidar	Other	Digital	PB030014.JPG	Nov-10	Other	As requested	Photo of shelter construction	Arup (Team)	sharepoint	
184	09 Oct 2013	Solidar	Other	Digital	TShelter Nowshera.jpg	Nov-10	Other	As requested	Photo of completed transitional shelter	Arup (Team)	sharepoint	
185	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	110104_UN-HABITAT_Update.xlsx	Jan-11	Other	As requested	Table: UPDATE ON THE UN-HABITAT SHELTER PROJECTS IN RESPONSE TO THE PAKISTAN 2010 FLOOD	Arup (Team)	sharepoint	
186	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	BALOCHISTAN SHELTER-OPTION 1.pdf	Nov-10	Other	As requested	UN HABITAT BALUCHISTAN SHELTER: Option 1 Bamboo, plans and x-sections	Arup (Team)	sharepoint	
187	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	BALOCHISTAN SHELTER-OPTION 2.pdf	Nov-10	Other	As requested	UN HABITAT BALUCHISTAN SHELTER: Option 3 Bamboo, plans and x-sections	Arup (Team)	sharepoint	
188	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	PUNJAB SHELTER-OPTION 1.pdf	Nov-10	Other	As requested	UN HABITAT PUNJAB SHELTER: Option 2, plans and x-sections	Arup (Team)	sharepoint	
189	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	PUNJAB SHELTER-OPTION 2.pdf	Nov-10	Other	As requested	UN HABITAT PUNJAB SHELTER: Option 2, plans and x-sections	Arup (Team)	sharepoint	
190	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	PUNJAB SHELTER-OPTION 3.pdf	Nov-10	Other	As requested	UN HABITAT PUNJAB SHELTER: Option 3, plans and x-sections	Arup (Team)	sharepoint	
191	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	PUNJAB SHELTER-OPTION 4.pdf	Nov-10	Other	As requested	UN HABITAT PUNJAB SHELTER: Option 4, plans and x-sections	Arup (Team)	sharepoint	
192	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	SINDH SHELTER-OPTION 1.pdf	Nov-10	Other	As requested	UN HABITAT SINDH SHELTER: Option 1 timber, plans and x-sections	Arup (Team)	sharepoint	
193	09 Oct 2013	UN Habitat, NDMA	Word Doc	Digital	ER_UN-H_Bal_Sibi_CERF II.docx	Jan-11	Other	As requested	Early recovery shelter planning template - UN Habitat	Arup (Team)	sharepoint	
194	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	UNH_Sibi_ER_latrines_BoQ.xls	Jan-11	Other	As requested	Table of unit rate to include Delivery at SIBI, Baluchistan (latrines)	Arup (Team)	sharepoint	
195	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	UNH_Sibi_ER_Temp.Sh_BBQ.xls	Jan-11	Other	As requested	Table of unit rate to include Delivery at SIBI, Baluchistan (temp shelters)	Arup (Team)	sharepoint	
196	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNH_Sibi_Shelter_Mounting + plan.ppt	Nov-10	Other	As requested	Shelter Model Construction Process - Baluchistan & KPK (presentation)	Arup (Team)	sharepoint	
197	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNHABITAT shelter in Sibi Balochistan 033.JPG	Nov-10	Other	As requested	Photo of completed UN Habitat shelter in Balochistan	Arup (Team)	sharepoint	
198	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UN-HABITAT, Sibi shelters 020.JPG	Nov-10	Other	As requested	Photo inside of shelter	Arup (Team)	sharepoint	
199	09 Oct 2013	UN Habitat, NDMA	Word Doc	Digital	ER_UNH_Sindh_Cerf3_110104.docx	Jan-11	Other	As requested	Early recovery shelter planning template - UN Habitat	Arup (Team)	sharepoint	
200	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	UNH_Sindh_C3_BQ_4.5inch Infill +brick col.xlsx	Jan-11	Other	As requested	Table of unit costs - OPTION 1:Extreme VULNERABLE, 4.5 Infill wall and 9" columns	Arup (Team)	sharepoint	
201	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	UNH_Sindh_C3_BQ_9inch-brick.xls	Dec-10	Other	As requested	Table of unit costs - OPTION 2: VULNERABLE, 9" Brick Masonry	Arup (Team)	sharepoint	
202	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	UNH_Sindh_C3_Plans.pdf	Jan-11	Other	As requested	Plans of Sindh shelters	Arup (Team)	sharepoint	
203	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	UNH_Sindh-C3_BQ_LohKat_bamboo.xlsx	Jan-11	Other	As requested	Draft table for Requisition of Construction Material for Bamboo Built Shelters	Arup (Team)	sharepoint	
204	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNH_Sindh_C3_4.5_brick (1).JPG	Dec-10	Other	As requested	Internal photo of brick shelter (incomplete)	Arup (Team)	sharepoint	
205	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNH_Sindh_C3_4.5_brick (2).JPG	Dec-10	Other	As requested	External photo of brick shelter (incomplete)	Arup (Team)	sharepoint	
206	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNH_Sindh_C3_4.5_brick (3).JPG	Dec-10	Other	As requested	External photo to rear of brick shelter (incomplete)	Arup (Team)	sharepoint	
207	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNH_Sindh_C3_4.5_brick (4).jpg	Dec-10	Other	As requested	Photo of brick shelter construction process	Arup (Team)	sharepoint	
208	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNH_Sindh_C3-9 brick_(1).JPG	Dec-10	Other	As requested	External photo of brick shelter (incomplete)	Arup (Team)	sharepoint	
209	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNH_Sindh_C3-9 brick_(2).JPG	Dec-10	Other	As requested	External side photo of brick shelter (incomplete)	Arup (Team)	sharepoint	
210	09 Oct 2013	UN Habitat, NDMA	Word Doc	Digital	110101_ER_UN-Habitat_Charsadda.docx	Jan-11	Other	As requested	Early recovery shelter planning template - UN Habitat	Arup (Team)	sharepoint	
211	09 Oct 2013	UN Habitat, NDMA	Other	Digital	b2 (Medium).JPG	Dec-10	Other	As requested	External photo of brick shelter construction	Arup (Team)	sharepoint	
212	09 Oct 2013	UN Habitat, NDMA	Other	Digital	b222 (Medium).JPG	Dec-10	Other	As requested	Photo of brick shelter (incomplete)	Arup (Team)	sharepoint	
213	09 Oct 2013	UN Habitat, NDMA	Other	Digital	DSC00395 (Medium).JPG	Dec-10	Other	As requested	Photo of roof beams (internal)	Arup (Team)	sharepoint	
214	09 Oct 2013	UN Habitat, NDMA	Other	Digital	DSC00396 (Medium).JPG	Dec-10	Other	As requested	Photo of paving slab works	Arup (Team)	sharepoint	
215	09 Oct 2013	UN Habitat, NDMA	Other	Digital	DSC05916 (Medium).JPG	Dec-10	Other	As requested	Photo of structure corner (brickwork and roof)	Arup (Team)	sharepoint	
216	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	UNH_KPK_C2_BoQ_rc slab.xlsx	Dec-10	Other	As requested	Table of costs: Shelter Option 1 - BRICK WALL WITH PRECAST CONCRETE ROOF	Arup (Team)	sharepoint	
217	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	UNH_KPK_C2_locations.xlsx	Jan-11	Other	As requested	Core-room shelters (CERF-2) - status report	Arup (Team)	sharepoint	
218	09 Oct 2013	UN Habitat, NDMA	Drawing	Digital	UNH_KPK_C2_plan.pdf	Dec-10	Other	As requested	UN Habitat Shelter Plan & Elevations	Arup (Team)	sharepoint	
219	09 Oct 2013	UN Habitat, NDMA	Word Doc	Digital	110101_ER_UN-Habitat_Muzaffaragarh.docx	Jan-11	Other	As requested	Early recovery shelter planning template - UN Habitat	Arup (Team)	sharepoint	
220	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	BoQ_3 Types_UNH_Punjab_Muzaffaragarh_.xlsx	Jan-11	Other	As requested	Table: BILL OF QUANTITIES OF THE APPLIED TYPES OF SHELTERS	Arup (Team)	sharepoint	
221	09 Oct 2013	UN Habitat, NDMA	Map	PDF	UNH_KotAddu_Overview_Location+photos.pdf	Jan-11	Other	As requested	UN-HABITAT One Room Shelter Intervention UC Hanjrai,Tehsil Kot Addu,District Muzaffar Garh - Map of locations	Arup (Team)	sharepoint	
222	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	UNH_Muzaffaragarh_Type A.pdf	Jan-11	Other	As requested	UN Habitat - Punjab shelter option A, plans and elevations	Arup (Team)	sharepoint	
223	09 Oct 2013	UN Habitat, NDMA	Drawing	PDF	UNH_Muzaffaragarh_Type B (6 pillars).pdf	Jan-11	Other	As requested	UN Habitat - Punjab shelter option B, plans and elevations	Arup (Team)	sharepoint	
224	09 Oct 2013	KASHF Foundation	Report	Digital	KASHF FOUNDATION.doc	Mar-11	Other	As requested	Kashf Foundation Flood Initiative: Relief, Reconstruction and Rehabilitation	Arup (Team)	sharepoint	
225	09 Oct 2013	IDSP	Word Doc	Digital	ER Planning Template.doc	Dec-10	Other	As requested	Early recovery shelter planning template - IDSP	Arup (Team)	sharepoint	
226	09 Oct 2013	IDSP	Report	PDF	IDSP Compilation.pdf	Dec-10	Other	As requested	Early recovery shelter planning template - IDSP (integrated with plans & photos)	Arup (Team)	sharepoint	
227	09 Oct 2013	IDSP	Excel File	Digital	ER BoQ Template.xls	Dec-10	Other	As requested	EARLY RECOVERY SHELTER BoQ - template	Arup (Team)	sharepoint	
228	09 Oct 2013	IDSP	Calculation	PDF	ER BoQ IDSP.pdf	Dec-10	Other	As requested	Early recovery shelter BoQ - cost summary	Arup (Team)	sharepoint	
229	09 Oct 2013	IDSP	Drawing	PDF	one room shelter.pdf	Dec-10	Other	As requested	Typical section of low cost room 15'x15'	Arup (Team)	sharepoint	
230	09 Oct 2013	IDSP	Other	Digital	Assessment.jpg	Oct-10	Other	As requested	Photograph of damage assessment	Arup (Team)	sharepoint	
231	09 Oct 2013	IDSP	Other	Digital	complete roof inside.JPG	Oct-10	Other	As requested	Photograph of completed roof	Arup (Team)	sharepoint	
232	09 Oct 2013	IDSP	Other	Digital	feasibility.JPG	Sep-10	Other	As requested	Photograph of derelict/damaged house	Arup (Team)	sharepoint	
233	09 Oct 2013	IDSP	Other	Digital	Feasibility1.JPG	Sep-10	Other	As requested	Photograph of derelict/damaged house	Arup (Team)	sharepoint	
234	09 Oct 2013	ACTED	Excel File	Digital	ER BoQ Template.xls	Nov-10	Other	As requested	BoQ cost template	Arup (Team)	sharepoint	
235	09 Oct 2013	ACTED	Word Doc	Digital	ER Planning Template.doc	Dec-10	Other	As requested	Early recovery planning template	Arup (Team)	sharepoint	
236	09 Oct 2013	Unknown	Excel File	Digital	ORS BOQ.xlsx	Nov-10	Other	As requested	One room shelter BoQ	Arup (Team)	sharepoint	
237	09 Oct 2013	IASC	Word Doc	Digital	Shelter Plan Form.doc	Nov-10	Other	As requested	One Room / Transitional Shelter Planning Form, Shelter NFI Cluster Technical Working Group (TWIG)	Arup (Team)	sharepoint	
238	09 Oct 2013	Unknown	Excel File	Digital	TS BOQ.xlsx	Nov-10	Other	As requested	Transitional shelter BoQ	Arup (Team)	sharepoint	
239	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	SHELTERS CLUSTER PROGRESS Updated 25.Feb.2011.xlsx	Feb-11	Other	As requested	UNHCR Shelter Cluster update	Arup (Team)	sharepoint	
240	09 Oct 2013	Heritage Foundation	Other	Digital	Heritage Foundation_Swat Demo GKG 100906.pptx	Nov-10	Other	As requested	Shelter programme - presentation	Arup (Team)	sharepoint	
241	09 Oct 2013	ARC International	Other	Digital	Shelter Presentation ARC-International.ppt	Aug-10	Other	As requested	ARC Shelter Program - Exerience Sharing (Farooq Khan)	Arup (Team)	sharepoint	
242	09 Oct 2013	UN Habitat, NDMA	Other	PDF	UN-HABITAT Model shelter presentation.pdf	Aug-10	Other	As requested	Shelter Model - Construction Process	Arup (Team)	sharepoint	
243	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNHCR Shelter Plan for 2011.pptx	Mar-11	Other	As requested	UNHCR Shelter plan for 2011 Sindh province - Pakistan	Arup (Team)	sharepoint	
244	09 Oct 2013	UN Habitat, NDMA	Other	Digital	UNHCR_Foundation_For_Rural_Development.pptx	Jan-11	Other	As requested	TRANSITION FROM TENT TO HOUSE - A real Story of community Involvement	Arup (Team)	sharepoint	
245	09 Oct 2013	UN Habitat, NDMA	Word Doc	Digital	080714 SCG Myanmar Handover Strategy final.doc	Aug-10	Other	As requested	Handover IFRC to UN-HABITAT: Emergency Shelter Coordination to Early Recovery Shelter Coordination	Arup (Team)	sharepoint	
246	09 Oct 2013	Unknown	Word Doc	Digital	091117 Version forSAG comments_ Shelter cluster early recovery strategy , Nov 17.docx	Aug-10	Other	As requested	EARTHQUAKE WEST SUMATRA 2009 - Shelter in Early Recovery Strategy	Arup (Team)	sharepoint	
247	09 Oct 2013	Unknown	Word Doc	Digital	091117_Early_Recovery_Cluster_Strategy.docx	Aug-10	Other	As requested	Early Recovery Cluster Strategy: November 15 onwards: Inputs to Early Recovery Network	Arup (Team)	sharepoint	
248	09 Oct 2013	Shelter Haiti	Word Doc	Digital	100306_Shelter_Technical guidance_haiti.doc	Aug-10	Other	As requested	Shelter Cluster Haiti: Transitional Shelter technical guidance 19/02/2010	Arup (Team)	sharepoint	
249	09 Oct 2013	UN Habitat, NDMA	Report	PDF	A1-AFGHANISTAN-2009-SOZMA-QUALA.pdf	Aug-10	Other	As requested	Case study: Afghanistan - 2009 - Conflict returnees	Arup (Team)	sharepoint	
250	09 Oct 2013	Cluster WG on early recovery	Report	PDF	ER_Internet.pdf	Mar-11	Other	As requested	Guidance note on Early Recovery	Arup (Team)	sharepoint	
251	09 Oct 2013	Unknown	Report	PDF	from_shelterprojects_2008.pdf	Aug-10	Other	As requested	Pakistan - 2005- Earthquake: Overview of the earthquake response	Arup (Team)	sharepoint	
252	09 Oct 2013	Birhrust/Cov University	Report	PDF	IREC_TraditionalVsModernConstructionPractices.pdf	Feb-11	Other	As requested	TRADITIONAL VS MODERN CONSTRUCTIUON PRACTICES	Arup (Team)	sharepoint	
253	09 Oct 2013	Oxfam	Report	PDF	Oxfam_TransitionalSettlementDisplacedPopulations.pdf	Feb-11	Other	As requested	Transitional settlement: displaced populations	Arup (Team)	sharepoint	

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
254	09 Oct 2013	Shelter Centre	Report	PDF	pakistasnfloods kit from Selecting NFIs for Shelter.pdf	Aug-10	Other	As requested	Case study: Pakistan, 2007, flood and cyclone	Arup (Team)	sharepoint	
255	09 Oct 2013	UN Habitat, NDMA	Report	PDF	shelterafterdisasterguidelines2010_0.pdf	Feb-11	Other	As requested	Shelter after disaster: strategies for transitional settlement and reconstruction	Arup (Team)	sharepoint	
256	09 Oct 2013	Unknown	Word Doc	Digital	SIDR Questinnaire_Individual LL v2.doc	Aug-10	Other	As requested	Early Recovery Needs Assessment: Household Survey - Interview Questionnaire for SIDR Affected People	Arup (Team)	sharepoint	
257	09 Oct 2013	Shelter Centre	Report	PDF	Transitional Shelter Standards 09a_0.pdf	Feb-11	Other	As requested	Transitional Shelter Standards - draft May 2009	Arup (Team)	sharepoint	
258	09 Oct 2013	Unknown	Word Doc	Digital	Transitional_Shelter_Description_v2.docx	Mar-11	Other	As requested	What Shelter is being Provided in Pakistan?	Arup (Team)	sharepoint	
259	09 Oct 2013	Unknown	Excel File	Digital	PRICE ANALYSIS 240311.xls	Mar-11	Other	As requested	MATERIAL PRICES IN FLOOD AFFECTED AREAS	Arup (Team)	sharepoint	
260	09 Oct 2013	Unknown	Word Doc	Digital	draft housing policy hunza 14072010 (2).doc	Aug-10	Other	As requested	Integrated Land and Housing Policy - Task Force for Shelter and Housing, Hunza, Gilgit Baltistan	Arup (Team)	sharepoint	
261	09 Oct 2013	Unknown	Word Doc	Digital	Land issues flood.docx	Aug-10	Other	As requested	Potential Land Issues in the Flood Affected Areas of Pakistan	Arup (Team)	sharepoint	
262	09 Oct 2013	Unknown	Excel File	Digital	SCDatabase_110331V2.xlsx	Mar-11	Other	As requested	Emergency recovery data table	Arup (Team)	sharepoint	
263	09 Oct 2013	Unknown	Word Doc	Digital	IM handover notes 2011 03 25.docx	Mar-11	Other	As requested	Shelter Cluster – Information Management handover notes (draft v2)	Arup (Team)	sharepoint	
264	09 Oct 2013	Unknown	Word Doc	Digital	IM handover notes 2011 03 28.docx	Mar-11	Other	As requested	Shelter Cluster – Information Management handover notes	Arup (Team)	sharepoint	
265	09 Oct 2013	Unknown	Word Doc	Digital	IM handover notes.docx	Mar-11	Other	As requested	Shelter Cluster – Information Management handover notes (draft v1)	Arup (Team)	sharepoint	
266	09 Oct 2013	Unknown	Word Doc	Digital	SRF - Shelter Cluster setup_110225.xlsx	Feb-11	Other	As requested	Shelter data outline	Arup (Team)	sharepoint	
267	09 Oct 2013	IASC	Word Doc	Digital	SRF_RollOut_Strategy_v06_110218.docx	Feb-11	Other	As requested	Shelter Cluster - Single Reporting Format - Roll Out Strategy - 18th February 2011	Arup (Team)	sharepoint	
268	09 Oct 2013	IASC	Map	Digital	SC-3W-BALOCHISTAN-20101222.jpg	Dec-10	Other	As requested	Emergency Shelter Gap and 3W - Balochistan - Dec 16 2010	Arup (Team)	sharepoint	
269	09 Oct 2013	IASC	Map	Digital	SC-3W-BALOCHISTAN-20101222-100percent.jpg	Dec-10	Other	As requested	Emergency Shelter Gap and 3W - Balochistan - Dec 16 2010	Arup (Team)	sharepoint	
270	09 Oct 2013	IASC	Map	Digital	SC-3W-Early-Recovery-Northern-Sindh-20101206.jpg	Dec-10	Other	As requested	Early Recovery - Northern Sindh - Dec 6 2010	Arup (Team)	sharepoint	
271	09 Oct 2013	IASC	Map	Digital	SC-3W-Early-Recovery-Northern-Sindh-20101206-100percent.jpg	Dec-10	Other	As requested	Early Recovery - Northern Sindh - Dec 6 2010	Arup (Team)	sharepoint	
272	09 Oct 2013	IASC	Map	Digital	SC-3W-FATA-20101012.jpg	Oct-10	Other	As requested	Emergency Shelter Gap and 3W - Federally Admin Tribal Areas Oct 12 2010	Arup (Team)	sharepoint	
273	09 Oct 2013	IASC	Map	Digital	SC-3W-Gilgit - Baltistan-20101012.jpg	Oct-10	Other	As requested	Emergency Shelter Gap and 3W - Gilgit - Baltistan - October 12 2010	Arup (Team)	sharepoint	
274	09 Oct 2013	IASC	Map	Digital	SC-3W-Gilgit - Baltistan-20101222.jpg	Dec-10	Other	As requested	Emergency Shelter Gap and 3W - Gilgit - Baltistan - Dec 16 2010	Arup (Team)	sharepoint	
275	09 Oct 2013	IASC	Map	Digital	SC-3W-Gilgit - Baltistan-20101222-100percent	Dec-10	Other	As requested	Emergency Shelter Gap and 3W - Gilgit - Baltistan - Dec 16 2010	Arup (Team)	sharepoint	
276	09 Oct 2013	IASC	Map	Digital	SC-3W-KPK-20101012.jpg	Oct-10	Other	As requested	Emergency Shelter Gap and 3W - Kyber Pakhtunkhwa - Oct 12 2010	Arup (Team)	sharepoint	
277	09 Oct 2013	IASC	Map	Digital	SC-3W-KPK-20101222.jpg	Dec-10	Other	As requested	Emergency Shelter Gap and 3W - Kyber Pakhtunkhwa - Dec 16 2010	Arup (Team)	sharepoint	
278	09 Oct 2013	IASC	Map	Digital	SC-3W-KPK-20101222-100percent.jpg	Dec-10	Other	As requested	Emergency Shelter Gap and 3W - Kyber Pakhtunkhwa - Dec 16 2010	Arup (Team)	sharepoint	
279	09 Oct 2013	IASC	Map	Digital	SC-3W-PAK-20101229.jpg	Dec-10	Other	As requested	Emergency Shelter Gap and 3W - Pak- Dec 29 2010	Arup (Team)	sharepoint	
280	09 Oct 2013	IASC	Map	Digital	SC-3W-PAK-20101229-100percent.jpg	Dec-10	Other	As requested	Emergency Shelter Gap and 3W - Pak- Dec 29 2010	Arup (Team)	sharepoint	
281	09 Oct 2013	IASC	Map	Digital	SC-3W-PUNJAB-20101012.jpg	Oct-10	Other	As requested	Gap and 3W - Punjab - Oct 12 2010	Arup (Team)	sharepoint	
282	09 Oct 2013	IASC	Map	Digital	SC-3W-PUNJAB-20101222.jpg	Dec-10	Other	As requested	Gap and 3W - Punjab - Dec 16 2010	Arup (Team)	sharepoint	
283	09 Oct 2013	IASC	Map	Digital	SC-3W-PUNJAB-20101222-100percent	Dec-10	Other	As requested	Gap and 3W - Punjab - Dec 16 2010	Arup (Team)	sharepoint	
284	09 Oct 2013	IASC	Map	Digital	SC-FLOOD-NORTHERN-SINDH-20101201.jpg	Dec-10	Other	As requested	Estimated maximum and current flood extent - Northern Sindh - Nov 25	Arup (Team)	sharepoint	
285	09 Oct 2013	IASC	Map	Digital	SC-GAP-BALOCHISTAN-20101109.jpg	Nov-10	Other	As requested	Emergency shelter distribution gap - Balochistan - Nov 9 2010	Arup (Team)	sharepoint	
286	09 Oct 2013	IASC	Map	Digital	SC-GAP-BALOCHISTAN-20101216.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Balochistan - Dec 16 2010	Arup (Team)	sharepoint	
287	09 Oct 2013	IASC	Map	Digital	SC-GAP-BALOCHISTAN-20101216-100percent	Dec-10	Other	As requested	Emergency shelter distribution gap - Balochistan - Dec 16 2010	Arup (Team)	sharepoint	
288	09 Oct 2013	IASC	Map	Digital	SC-GAP-BALOCHISTAN-20110104-100percent.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Balochistan - Jan 4 2011	Arup (Team)	sharepoint	
289	09 Oct 2013	IASC	Map	Digital	SC-GAP-FATA-20101109.jpg	Nov-10	Other	As requested	Emergency shelter distribution gap - Fata - Nov 9 2010	Arup (Team)	sharepoint	
290	09 Oct 2013	IASC	Map	Digital	SC-GAP-FATA-20101216.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Fata - Dec 16 2010	Arup (Team)	sharepoint	
291	09 Oct 2013	IASC	Map	Digital	SC-GAP-FATA-20101216-100percent.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Fata - Dec 16 2010	Arup (Team)	sharepoint	
292	09 Oct 2013	IASC	Map	Digital	SC-GAP-FATA-20110104.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Fata - Jan 4 2011	Arup (Team)	sharepoint	
293	09 Oct 2013	IASC	Map	Digital	SC-GAP-FATA-20110104-100percent.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Fata - Jan 4 2011	Arup (Team)	sharepoint	
294	09 Oct 2013	IASC	Map	Digital	SC-GAP-GB-20101109.jpg	Nov-10	Other	As requested	Emergency shelter distribution gap - Gilgit Baltistan- Nov 9 2010	Arup (Team)	sharepoint	
295	09 Oct 2013	IASC	Map	Digital	SC-GAP-GB-20101216.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Gilgit Baltistan- Dec 16 2010	Arup (Team)	sharepoint	
296	09 Oct 2013	IASC	Map	Digital	SC-GAP-GB-20110104.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - GB - Jan 4 2011	Arup (Team)	sharepoint	
297	09 Oct 2013	IASC	Map	Digital	SC-GAP-GB-20110104-100percent.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - GB - Jan 4 2011	Arup (Team)	sharepoint	
298	09 Oct 2013	IASC	Map	Digital	SC-GAP-GB-20110112.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - GB - Jan 12 2011	Arup (Team)	sharepoint	
299	09 Oct 2013	IASC	Map	Digital	SC-GAP-GB-20110112-100percent.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - GB - Jan 12 2011	Arup (Team)	sharepoint	
300	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-20101109.jpg	Nov-10	Other	As requested	Emergency shelter distribution gap - Kyber Pakhtunkhwa - Nov 9 2010	Arup (Team)	sharepoint	
301	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-20101216.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Kyber Pakhtunkhwa - Dec 16 2010	Arup (Team)	sharepoint	
302	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-20101216-100percent.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Kyber Pakhtunkhwa - Dec 16 2010	Arup (Team)	sharepoint	
303	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-20110104.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Kyber Pakhtunkhwa - Dec 16 2010	Arup (Team)	sharepoint	
304	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-20110104-100percent.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Kyber Pakhtunkhwa - Dec 16 2010	Arup (Team)	sharepoint	
305	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-20110124.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Kyber Pakhtunkhwa - Jan 24 2011	Arup (Team)	sharepoint	
306	09 Oct 2013	IASC	Map	Digital	SC-GAP-NORTHERN-SINDH-20101109.jpg	Nov-10	Other	As requested	Emergency shelter distribution gap - Northern Sindh- Nov 9 2010	Arup (Team)	sharepoint	
307	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20101209.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - P.A.K. - Dec 9 2010	Arup (Team)	sharepoint	
308	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20101209-100percent.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - P.A.K. - Dec 16 2010	Arup (Team)	sharepoint	
309	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20101216.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - P.A.K. - Dec 16 2010	Arup (Team)	sharepoint	
310	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20101216-100percent.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - P.A.K. - Dec 16 2010	Arup (Team)	sharepoint	
311	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20101229.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - P.A.K. - Dec 29 2010	Arup (Team)	sharepoint	
312	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20101229-100percent	Dec-10	Other	As requested	Emergency shelter distribution gap - P.A.K. - Dec 29 2010	Arup (Team)	sharepoint	
313	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20110104.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - P.A.K. - Jan 4 2011	Arup (Team)	sharepoint	
314	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20110104-100percent.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - P.A.K. - Jan 4 2011	Arup (Team)	sharepoint	
315	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20101109.jpg	Nov-10	Other	As requested	Emergency shelter distribution gap - Pakistan. - Nov 9 2010	Arup (Team)	sharepoint	
316	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20101123.jpg	Nov-10	Other	As requested	Emergency shelter distribution gap - Pakistan. - Nov 23 2010	Arup (Team)	sharepoint	
317	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20101206.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Pakistan. - Dec 6 2010	Arup (Team)	sharepoint	
318	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20101216.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Pakistan. - Dec 16 2010	Arup (Team)	sharepoint	
319	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20101216-100percent.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Pakistan. - Dec 16 2010	Arup (Team)	sharepoint	
320	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110104.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Pakistan. -Jan 4 2011	Arup (Team)	sharepoint	
321	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110104-100percent.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Pakistan. -Jan 4 2011	Arup (Team)	sharepoint	
322	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110112.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Pakistan. - Jan 12 2011	Arup (Team)	sharepoint	
323	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110112-100percdent	Jan-11	Other	As requested	Emergency shelter distribution gap - Pakistan. - Jan 12 2011	Arup (Team)	sharepoint	
324	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110201-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Pakistan. - Feb 1 2011	Arup (Team)	sharepoint	
325	09 Oct 2013	IASC	Map	Digital	SC-GAP-PUNJAB-20101109.jpg	Nov-10	Other	As requested	Emergency shelter distribution gap - Pakistan. - Nov 9 2010	Arup (Team)	sharepoint	
326	09 Oct 2013	IASC	Map	Digital	SC-GAP-PUNJAB-20101216.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Punjab. - Dec 16 2010	Arup (Team)	sharepoint	
327	09 Oct 2013	IASC	Map	Digital	SC-GAP-PUNJAB-20101216-100percent.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Punjab. - Dec 16 2010	Arup (Team)	sharepoint	
328	09 Oct 2013	IASC	Map	Digital	SC-GAP-PUNJAB-20110104.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Punjab. - Jan 4 2011	Arup (Team)	sharepoint	
329	09 Oct 2013	IASC	Map	Digital	SC-GAP-PUNJAB-20110104-100percent.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Punjab. - Jan 4 2011	Arup (Team)	sharepoint	
330	09 Oct 2013	IASC	Map	Digital	SC-GAP-SINDH-20101109.jpg	Nov-10	Other	As requested	Emergency shelter distribution gap - Sindh. - Nov 9 2010	Arup (Team)	sharepoint	
331	09 Oct 2013	IASC	Map	Digital	SC-GAP-SINDH-20101216.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Sindh. - Dec 16 2010	Arup (Team)	sharepoint	

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
332	09 Oct 2013	IASC	Map	Digital	SC-GAP-SINDH-20101216-100percent.jpg	Dec-10	Other	As requested	Emergency shelter distribution gap - Sindh. - Dec 16 2010	Arup (Team)	sharepoint	
333	09 Oct 2013	IASC	Map	Digital	SC-GAP-SINDH-20110104.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Sindh. - Jan 4 2011	Arup (Team)	sharepoint	
334	09 Oct 2013	IASC	Map	Digital	SC-GAP-SINDH-20110104-100percent.jpg	Jan-11	Other	As requested	Emergency shelter distribution gap - Sindh. - Jan 4 2011	Arup (Team)	sharepoint	
335	09 Oct 2013	IASC	Map	Digital	Grid_Punjab.jpg	Feb-11	Other	As requested	Base grid map Punjab	Arup (Team)	sharepoint	
336	09 Oct 2013	IASC	Map	Digital	IOM-ORS-PUNJAB-20110316.jpg	Mar-11	Other	As requested	One room shelter union councils by donor Punjab - March 16 2011	Arup (Team)	sharepoint	
337	09 Oct 2013	IASC	Map	Digital	IOM-ORS-PUNJAB-MUZAFFARGARH-20110316.jpg	Mar-11	Other	As requested	One room shelter union councils by donor Muzaffargarh area, Punjab - March 16 2011	Arup (Team)	sharepoint	
338	09 Oct 2013	IASC	Map	Digital	IOM-ORS-PUNJAB-Northern-Area-20110316.jpg	Mar-11	Other	As requested	One room shelter union councils by donor northern area, Punjab - March 16 2011	Arup (Team)	sharepoint	
339	09 Oct 2013	IASC	Map	Digital	IOM-ORS-PUNJAB-RAHIM-YAR-KHAN-20110316.jpg	Mar-11	Other	As requested	One room shelter union councils by donor Rahim Yar Khan area, Punjab - March 16 2011	Arup (Team)	sharepoint	
340	09 Oct 2013	IASC	Map	Digital	IOM-ORS-SINDH-20110316.jpg	Mar-11	Other	As requested	One room shelter union councils by donor Sindh - March 16 2011	Arup (Team)	sharepoint	
341	09 Oct 2013	IASC	Map	Digital	IOM-ORS-SINDH-Northern-Area-20110316.jpg	Mar-11	Other	As requested	One room shelter union councils by donor, northern area, Sindh - March 16 2011	Arup (Team)	sharepoint	
342	09 Oct 2013	IASC	Map	Digital	IOM-ORS-SINDH-Southern-Area-20110316.jpg	Mar-11	Other	As requested	One room shelter union councils by donor, southern area Sindh - March 16 2011	Arup (Team)	sharepoint	
343	09 Oct 2013	IASC	Map	Digital	MC-KPK-20110323.jpg	Mar-11	Other	As requested	Mass communications team Tehsil coverage - Kyber Pakhtunkhwa, March 23 2011	Arup (Team)	sharepoint	
344	09 Oct 2013	IASC	Map	Digital	MC-Punjab-20110323.jpg	Mar-11	Other	As requested	Mass communications team UC coverage by district, Punjab, March 23 2011	Arup (Team)	sharepoint	
345	09 Oct 2013	IASC	Map	Digital	MC-Sindh-20110323.jpg	Mar-11	Other	As requested	Mass communications team UC coverage by district, Sindh, March 23 2011	Arup (Team)	sharepoint	
346	09 Oct 2013	IASC	Map	Digital	SC-3W-KPK-and-FATA-20110210.jpg	Feb-11	Other	As requested	Emergency shelter gap and 3W - KPK and FATA, Feb 10 2011	Arup (Team)	sharepoint	
347	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-KPK and FATA-20110222.jpg	Feb-11	Other	As requested	Early recovery agency commitments - KPK and FATA, Feb 22 2011	Arup (Team)	sharepoint	
348	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-KPK and FATA-20110222-100percent.jpg	Feb-11	Other	As requested	Early recovery agency commitments - KPK and FATA, Feb 22 2011	Arup (Team)	sharepoint	
349	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-KPK-and-FATA-20110226.jpg	Mar-11	Other	As requested	Early recovery agency commitments - KPK and FATA, Feb 26 2011	Arup (Team)	sharepoint	
350	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-KPK-and-FATA-20110226-100percent.jpg	Mar-11	Other	As requested	Early recovery agency commitments - KPK and FATA, Feb 26 2011	Arup (Team)	sharepoint	
351	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-PAK-20110209.jpg	Feb-11	Other	As requested	Early recovery 3W - PAK - Feb 9 2011	Arup (Team)	sharepoint	
352	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-PUNJAB-20110226.jpg	Mar-11	Other	As requested	Early recovery 3W / commitments - Punjab - Feb 26 2011	Arup (Team)	sharepoint	
353	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-PUNJAB-20110226-100percent.jpg	Mar-11	Other	As requested	Early recovery 3W / commitments - Punjab - Feb 26 2011	Arup (Team)	sharepoint	
354	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-2011022-100percent	Mar-11	Other	As requested	Early recovery 3W / commitments - Sindh - Feb 26 2011	Arup (Team)	sharepoint	
355	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-20110226.jpg	Mar-11	Other	As requested	Early recovery 3W / commitments - Sindh - Feb 26 2011	Arup (Team)	sharepoint	
356	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Jacobabad-2011026.jpg	Feb-11	Other	As requested	Early recovery shelter commitments - Sindh - Jacobabad, Feb 26 2011	Arup (Team)	sharepoint	
357	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Jacobabad-2011026-100percent.jpg	Feb-11	Other	As requested	Early recovery shelter commitments - Sindh - Jacobabad, Feb 26 2011	Arup (Team)	sharepoint	
358	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Jacobabad-20110214.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh - Jacobabad, Feb 14 2011	Arup (Team)	sharepoint	
359	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Jacobabad-20110222.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh - Jacobabad, Feb 22 2011	Arup (Team)	sharepoint	
360	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Jacobabad-20110222-100percent.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh - Jacobabad, Feb 22 2011	Arup (Team)	sharepoint	
361	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Kashmore-20110214.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh- Kashmore, Feb 14 2011	Arup (Team)	sharepoint	
362	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Kashmore-20110226.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh- Kashmore, Feb 26 2011	Arup (Team)	sharepoint	
363	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Kashmore-20110226-100percent.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh- Kashmore, Feb 26 2011	Arup (Team)	sharepoint	
364	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Larkana-20110214.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh- Larkana, Feb 14 2011	Arup (Team)	sharepoint	
365	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Larkana-20110226.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh- Larkana, Feb 26 2011	Arup (Team)	sharepoint	
366	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Larkana-20110226-100percent.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh- Larkana, Feb 26 2011	Arup (Team)	sharepoint	
367	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Qambar Shahdadkot-20110214.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh - SC-ER-3W-SINDH - Qambar Shahdadkot - Feb 14 2011	Arup (Team)	sharepoint	
368	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Qambar Shahdadkot-20110226.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh - SC-ER-3W-SINDH - Qambar Shahdadkot - Feb 26 2011	Arup (Team)	sharepoint	
369	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Qambar Shahdadkot-20110226-100percent.jpg	Feb-11	Other	As requested	Early recovery 3W - Sindh - SC-ER-3W-SINDH - Qambar Shahdadkot - Feb 26 2011	Arup (Team)	sharepoint	
370	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Shikarpur-20110214	Feb-11	Other	As requested	Early recovery 3W - Sindh - Shikarpur - Feb 14 2011	Arup (Team)	sharepoint	
371	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Shikarpur-20110226.jpg	Mar-11	Other	As requested	Early recovery shelter commitments - Sindh - Shikarpur - Feb 14 2011	Arup (Team)	sharepoint	
372	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-Shikarpur-20110226-100percent	Mar-11	Other	As requested	Early recovery shelter commitments - Sindh - Shikarpur - Feb 26 2011	Arup (Team)	sharepoint	
373	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-BALOCHISTAN-20110314.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - Balochistan, Mar 14 2011	Arup (Team)	sharepoint	
374	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-BALOCHISTAN-20110314-100percent.jpg	Mar-11	Other	As requested	Early recovery 3W - Sindh - SC-ER-3W-SINDH - Qambar Shahdadkot - Feb 26 2011	Arup (Team)	sharepoint	
375	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-KPK-and-FATA-20110221.jpg	Feb-11	Other	As requested	Early recovery shelter distribution gap - KPK and FATA, Feb 21 2011	Arup (Team)	sharepoint	
376	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-KPK-and-FATA-20110221-100percent.jpg	Feb-11	Other	As requested	Early recovery shelter distribution gap - KPK and FATA, Feb 21 2011	Arup (Team)	sharepoint	
377	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-KPK-and-FATA-20110226.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - KPK and FATA, Feb 26 2011	Arup (Team)	sharepoint	
378	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-KPK-and-FATA-20110226-100percent.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - KPK and FATA, Feb 26 2011	Arup (Team)	sharepoint	
379	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-PAKISTAN-20110215.jpg	Feb-11	Other	As requested	Early recovery shelter distribution gap - Pakistan, Feb 14 2011	Arup (Team)	sharepoint	
380	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-PAKISTAN-20110215-100percent.jpg	Feb-11	Other	As requested	Early recovery shelter distribution gap - Pakistan, Feb 14 2011	Arup (Team)	sharepoint	
381	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-PAKISTAN-20110314.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - Pakistan, Mar 14 2011	Arup (Team)	sharepoint	
382	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-PAKISTAN-20110314-100percent.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - Pakistan, Mar 14 2011	Arup (Team)	sharepoint	
383	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-PAKISTAN-20110330.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - Pakistan, Mar 14 2011	Arup (Team)	sharepoint	
384	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-PAKISTAN-20110330-100percent.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - Pakistan, Mar 14 2011	Arup (Team)	sharepoint	
385	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-PUNJAB-20110226.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - Punjab, Feb 26 2011	Arup (Team)	sharepoint	
386	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-PUNJAB-20110226-100percent.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - Punjab, Feb 26 2011	Arup (Team)	sharepoint	
387	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-SINDH-20110226.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - Sindh, Feb 26 2011	Arup (Team)	sharepoint	
388	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-SINDH-20110226-100percent.jpg	Mar-11	Other	As requested	Early recovery shelter distribution gap - Sindh, Feb 26 2011	Arup (Team)	sharepoint	
389	09 Oct 2013	IASC	Map	Digital	SC-ES-3W-PAK-20110209.jpg	Mar-11	Other	As requested	Emergency shelter 3W - PAK - Feb 9 2011	Arup (Team)	sharepoint	
390	09 Oct 2013	IASC	Map	Digital	SC-ES-3W-PAK-20110209-100percent.jpg	Mar-11	Other	As requested	Emergency shelter 3W - PAK - Feb 9 2011	Arup (Team)	sharepoint	
391	09 Oct 2013	IASC	Map	Digital	SC-ES-3W-SINDH-20110226.jpg	Mar-11	Other	As requested	Emergency shelter 3W [and shelter distributions] - Sindh, Feb 26 2011	Arup (Team)	sharepoint	
392	09 Oct 2013	IASC	Map	Digital	SC-ES-3W-SINDH-20110226-100percent.jpg	Mar-11	Other	As requested	Emergency shelter 3W [and shelter distributions] - Sindh, Feb 26 2011	Arup (Team)	sharepoint	
393	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-KPK-and-FATA-20110222.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A, Feb 22 2011	Arup (Team)	sharepoint	
394	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-KPK-and-FATA-20110222-100percent	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A, Feb 22 2011	Arup (Team)	sharepoint	
395	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-KPK-and-FATA-20110226.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A, Feb 26 2011 (thumbnail)	Arup (Team)	sharepoint	
396	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-KPK-and-FATA-20110226-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A, Feb 26 2011	Arup (Team)	sharepoint	
397	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-PAKISTAN-20110226.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Feb 26 2011	Arup (Team)	sharepoint	
398	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-PAKISTAN-20110226-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Feb 26 2011	Arup (Team)	sharepoint	
399	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-PAKISTAN-20110314.jpg	Mar-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Mar 14 2011	Arup (Team)	sharepoint	
400	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-PAKISTAN-20110314-100percent.jpg	Mar-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Mar 14 2011	Arup (Team)	sharepoint	
401	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-PAKISTAN-20110330.jpg	Mar-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Mar 30 2011	Arup (Team)	sharepoint	
402	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-PAKISTAN-20110330-100percent.jpg	Mar-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Mar 30 2011	Arup (Team)	sharepoint	
403	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-SINDH-20110226.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Sindh, Feb 26 2011	Arup (Team)	sharepoint	
404	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-SINDH-20110226-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Sindh, Feb 26 2011	Arup (Team)	sharepoint	
405	09 Oct 2013	IASC	Map	Digital	SC-GAP-BALOCHISTAN-20110201.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Balochistan, Feb 1 2011	Arup (Team)	sharepoint	
406	09 Oct 2013	IASC	Map	Digital	SC-GAP-BALOCHISTAN-20110201-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Balochistan, Feb 1 2011	Arup (Team)	sharepoint	
407	09 Oct 2013	IASC	Map	Digital	SC-GAP-GB-20110201.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - GB, Feb 1 2011	Arup (Team)	sharepoint	
408	09 Oct 2013	IASC	Map	Digital	SC-GAP-GB-20110201-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - GB, Feb 1 2011	Arup (Team)	sharepoint	
409	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-20110201.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K., Feb 1 2011	Arup (Team)	sharepoint	
410	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-20110201-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K., Feb 1 2011	Arup (Team)	sharepoint	
411	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-20110210.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K., Feb 10 2011	Arup (Team)	sharepoint	

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
412	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-and-FATA-20110201.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A., Feb 1 2011	Arup (Team)	sharepoint	
413	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-and-FATA-20110201-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A., Feb 1 2011	Arup (Team)	sharepoint	
414	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-and-FATA-20110210.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A., Feb 10 2011	Arup (Team)	sharepoint	
415	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-and-FATA-20110210_100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A., Feb 10 2011	Arup (Team)	sharepoint	
416	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-and-FATA-20110214.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A., Feb 14 2011	Arup (Team)	sharepoint	
417	09 Oct 2013	IASC	Map	Digital	SC-GAP-KPK-and-FATA-20110214-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - K.P.K. and F.A.T.A., Feb 14 2011	Arup (Team)	sharepoint	
418	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20110201.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - P.A.K., Feb 1 2011	Arup (Team)	sharepoint	
419	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAK-20110201-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - P.A.K., Feb 1 2011	Arup (Team)	sharepoint	
420	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110201.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Feb 1 2011	Arup (Team)	sharepoint	
421	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110201-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Feb 1 2011	Arup (Team)	sharepoint	
422	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110214.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Feb 14 2011	Arup (Team)	sharepoint	
423	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110214-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Feb 14 2011	Arup (Team)	sharepoint	
424	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110226.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Feb 26 2011	Arup (Team)	sharepoint	
425	09 Oct 2013	IASC	Map	Digital	SC-GAP-PAKISTAN-20110226-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Pakistan, Feb 26 2011	Arup (Team)	sharepoint	
426	09 Oct 2013	IASC	Map	Digital	SC-GAP-PUNJAB-20110201.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Punjab, Feb 1 2011	Arup (Team)	sharepoint	
427	09 Oct 2013	IASC	Map	Digital	SC-GAP-PUNJAB-20110201-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Punjab, Feb 1 2011	Arup (Team)	sharepoint	
428	09 Oct 2013	IASC	Map	Digital	SC-GAP-SINDH-20110201.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Sindh, Feb 1 2011	Arup (Team)	sharepoint	
429	09 Oct 2013	IASC	Map	Digital	SC-GAP-SINDH-20110201-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Sindh, Feb 1 2011	Arup (Team)	sharepoint	
430	09 Oct 2013	IASC	Map	Digital	SC-GAP-SINDH-20110214.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Sindh, Feb 14 2011	Arup (Team)	sharepoint	
431	09 Oct 2013	IASC	Map	Digital	SC-GAP-SINDH-20110214-100percent.jpg	Feb-11	Other	As requested	Emergency shelter distribution gap - Sindh, Feb 14 2011	Arup (Team)	sharepoint	
432	09 Oct 2013	IOM	Map	Digital	SC-Reference-Muzaffargarh-20110222.jpg	Feb-11	Other	As requested	Muzzaffargarh basemap	Arup (Team)	sharepoint	
433	09 Oct 2013	IOM	Map	Digital	SC-Reference-Muzaffargarh-20110222-100percent.jpg	Feb-11	Other	As requested	Muzzaffargarh basemap	Arup (Team)	sharepoint	
434	09 Oct 2013	IASC	Map	Digital	SC-Reference-PUNJAB-20110208.jpg	Feb-11	Other	As requested	Punjab - Ucs in flood affected districts	Arup (Team)	sharepoint	
435	09 Oct 2013	IASC	Map	Digital	SC-Reference-PUNJAB-Bhakkar-20110208.jpg	Feb-11	Other	As requested	Punjab - Bhakkar - Ucs	Arup (Team)	sharepoint	
436	09 Oct 2013	IASC	Map	Digital	SC-Reference-PUNJAB-DGKhan-20110208.jpg	Feb-11	Other	As requested	Punjab - DG Khan - Ucs	Arup (Team)	sharepoint	
437	09 Oct 2013	IASC	Map	Digital	SC-Reference-PUNJAB-Khushab-20110208.jpg	Feb-11	Other	As requested	Punjab - Khushab - Ucs	Arup (Team)	sharepoint	
438	09 Oct 2013	IASC	Map	Digital	SC-Reference-PUNJAB-Layyah-20110208.jpg	Feb-11	Other	As requested	Punjab - Layyah - Ucs	Arup (Team)	sharepoint	
439	09 Oct 2013	IASC	Map	Digital	SC-Reference-PUNJAB-Mianwali-20110208.jpg	Feb-11	Other	As requested	Punjab - Mianwali - Ucs	Arup (Team)	sharepoint	
440	09 Oct 2013	IASC	Map	Digital	SC-Reference-PUNJAB-Multan-20110208.jpg	Feb-11	Other	As requested	Punjab - Multan - Ucs	Arup (Team)	sharepoint	
441	09 Oct 2013	IASC	Map	Digital	SC-Reference-PUNJAB-Muzaffargarh-20110208.jpg	Feb-11	Other	As requested	Punjab - Muzaffargarh - Ucs	Arup (Team)	sharepoint	
442	09 Oct 2013	IASC	Map	Digital	SC-Reference-PUNJAB-Rajanpur-20110208	Feb-11	Other	As requested	Punjab - Rajanpur - Ucs	Arup (Team)	sharepoint	
443	09 Oct 2013	IASC	Map	Digital	SC-3W-Ghotki-20101112.jpg	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Ghoki district - Nov 10 2010	Arup (Team)	sharepoint	
444	09 Oct 2013	IASC	Map	Digital	SC-3W-Jaccobabad-20101112.jpg	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Jaccobabad district - Nov 10 2010	Arup (Team)	sharepoint	
445	09 Oct 2013	IASC	Map	Digital	SC-3W-Kashmore-20101112.jpg	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Kashmore district - Nov 10 2010	Arup (Team)	sharepoint	
446	09 Oct 2013	IASC	Map	Digital	SC-3W-Khairpur-20101112.jpg	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Khairpur district - Nov 10 2010	Arup (Team)	sharepoint	
447	09 Oct 2013	IASC	Map	Digital	SC-3W-Larkana-20101112.jpg	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Larkana district - Nov 10 2010	Arup (Team)	sharepoint	
448	09 Oct 2013	IASC	Map	Digital	SC-3W-Naushahro Feroze-20101112	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Naushaharo Feroze district - Nov 10 2010	Arup (Team)	sharepoint	
449	09 Oct 2013	IASC	Map	Digital	SC-3W-Qambar Shahdadkot-20101112.jpg	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Qambar Shahdadkot district - Nov 10 2010	Arup (Team)	sharepoint	
450	09 Oct 2013	IASC	Map	Digital	SC-3W-Shaheed Benazir Abad-20101112.jpg	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Shaheed Benazir Abad district - Nov 10 2010	Arup (Team)	sharepoint	
451	09 Oct 2013	IASC	Map	Digital	SC-3W-Shikapur-20101112.jpg	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Shikapur district - Nov 10 2010	Arup (Team)	sharepoint	
452	09 Oct 2013	IASC	Map	Digital	SC-3W-Sukkur-20101112.jpg	Nov-10	Other	As requested	Who does emergency shelter/NFI distribution at taluka level for Sukkur district - Nov 10 2010	Arup (Team)	sharepoint	
453	09 Oct 2013	IASC	Map	Digital	SC-ER-3W-SINDH-20110226.mpk	Mar-11	Other	As requested	EARLY RECOVERY 3W / COMMITMENTS - SINDH - February 26, 2011	Arup (Team)	sharepoint	
454	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-PAKISTAN-20110330.mpk	Mar-11	Other	As requested	EARLY RECOVERY GAP / COMMITMENTS - Pakistan - March 30, 2011	Arup (Team)	sharepoint	
455	09 Oct 2013	IASC	Map	Digital	SC-ER-GAP-SINDH-20110226.mpk	Mar-11	Other	As requested	EARLY RECOVERY GAP / COMMITMENTS - Sindh - February 26, 2011	Arup (Team)	sharepoint	
456	09 Oct 2013	IASC	Map	Digital	SC-ES-3W-PAK-20110209.mpk	Mar-11	Other	As requested	Emergency Shelter 3W - PAK - February 9, 2011	Arup (Team)	sharepoint	
457	09 Oct 2013	IASC	Map	Digital	SC-ES-GAP-PAKISTAN-20110330.mpk	Mar-11	Other	As requested	Emergency Shelter GAP - Pakistan - March 30, 2011	Arup (Team)	sharepoint	
458	09 Oct 2013	Unknown	Other	Digital	updatedsetofadminboundaries.zip	Mar-11	Other	As requested	Shape file - admin boundaries	Arup (Team)	sharepoint	
459	09 Oct 2013	Unknown	Map	Digital	Pakistan boundary.lpk	Mar-11	Other	As requested	GIS layer file - Pakistan boundaries	Arup (Team)	sharepoint	
460	09 Oct 2013	Unknown	Excel File	Digital	111202_IOM_ORS_HERWG.xlsx	Dec-11	Other	As requested	HERWG 3W FORMAT- SHELTER ACTIVITIES	Arup (Team)	sharepoint	
461	09 Oct 2013	Unknown	Excel File	Digital	HERWG_ORS_update_by agency_by union council_27-01-2012 (1).xlsx	Feb-12	Other	As requested	HERWG - 3W UPDATES BY AGENCY BY UNION COUNCIL	Arup (Team)	sharepoint	
462	09 Oct 2013	Unknown	Excel File	Digital	HERWG_ORS_update_by agency_by union council_27-01-2012 JWW edit.xlsx	Nov-12	Other	As requested	Shelter completions by union council area	Arup (Team)	sharepoint	
463	09 Oct 2013	Unknown	Excel File	Digital	HERWG_ORS_update_by agency_by union council	Feb-12	Other	As requested	HERWG - 3W UPDATES BY AGENCY BY UNION COUNCIL	Arup (Team)	sharepoint	
464	09 Oct 2013	Unknown	Other	PDF	IOM-ORS Frequency by Location(27-01-2012)-HERWG Update (1).pdf	Feb-12	Other	As requested	IOM - ORS Frequency by Location (Village)	Arup (Team)	sharepoint	
465	09 Oct 2013	IASC	Other	PDF	ACTEDCompilation.pdf	Feb-11	Other	As requested	Early recovery shelter planning template: ACTED	Arup (Team)	sharepoint	
466	09 Oct 2013	ACTED	Other	Digital	IMG00057-20101210-1508.jpg	Feb-11	Other	As requested	Photo of shelter under construction	Arup (Team)	sharepoint	
467	09 Oct 2013	ACTED	Excel File	Digital	5 x 4 BRewised Shelter BOQ with current matrial rate.xls	Feb-11	Other	As requested	Cost summary for one room shelter	Arup (Team)	sharepoint	
468	09 Oct 2013	CARE	Drawing	PDF	elevation.pdf	Feb-11	Other	As requested	Room and kitchen elevation / toilet elevation	Arup (Team)	sharepoint	
469	09 Oct 2013	MSF	Excel File	Digital	DIST NFI TS 10022011.xls	Mar-11	Other	As requested	DISTRIBUTION RECORD OF VILLAGES AFFECTED BY THE FLOOD: KATCHA AREA FROM ALI ABAD TO MANZOORABAD	Arup (Team)	sharepoint	
470	09 Oct 2013	People in Need	Drawing	PDF	01 Ground Floor - PIN design of shelter for Nowshera Rapid.pdf	Jan-11	Other	As requested	RAPID project, Nowshera, Pakistan: ground floor plan	Arup (Team)	sharepoint	
471	09 Oct 2013	People in Need	Drawing	PDF	02 Section A-A' - PIN design of shelter for Nowshera Rapid.pdf	Jan-11	Other	As requested	RAPID project, Nowshera, Pakistan: x-section A-A'	Arup (Team)	sharepoint	
472	09 Oct 2013	People in Need	Drawing	PDF	03 Section B-B' - PIN design of shelter for Nowshera Rapid.pdf	Jan-11	Other	As requested	RAPID project, Nowshera, Pakistan: x-section B-B'	Arup (Team)	sharepoint	
473	09 Oct 2013	People in Need	Drawing	PDF	04 Front View - PIN design of shelter for Nowshera Rapid.pdf	Jan-11	Other	As requested	RAPID project, Nowshera, Pakistan: front view	Arup (Team)	sharepoint	
474	09 Oct 2013	People in Need	Drawing	PDF	05 Side View - PIN design of shelter for Nowshera Rapid.pdf	Jan-11	Other	As requested	RAPID project, Nowshera, Pakistan: side view	Arup (Team)	sharepoint	
475	09 Oct 2013	People in Need	Drawing	PDF	06 Back View - PIN design of shelter for Nowshera Rapid.pdf	Jan-11	Other	As requested	RAPID project, Nowshera, Pakistan: back view	Arup (Team)	sharepoint	
476	09 Oct 2013	People in Need	Excel File	Digital	Detail BOQ.xlsx	Jan-11	Other	As requested	BoQ Room internal size 18 feet x 15 feet with 10 Column (9"x9")	Arup (Team)	sharepoint	
477	09 Oct 2013	UN Habitat, NDMA	Word Doc	Digital	2011 Shelter Design Reccommendations.doc	Feb-11	Other	As requested	Recommendations - One Room Shelter Design – 2011	Arup (Team)	sharepoint	
478	09 Oct 2013	UN Habitat, NDMA	Report	PDF	110222_Punjab_ORS_Compilation.pdf	Feb-11	Other	As requested	EARLY RECOVERY SHELTER DESIGNS	Arup (Team)	sharepoint	
479	09 Oct 2013	Unknown	Word Doc	Digital	Adequacy of Shelte v 3.doc	Feb-11	Other	As requested	Adequacy of shelter guidelines	Arup (Team)	sharepoint	
480	09 Oct 2013	Unknown	Excel File	Digital	Balockistan_Shelter Progress 2011 Program (1).xls	Feb-11	Other	As requested	Shelter progress table template	Arup (Team)	sharepoint	
481	09 Oct 2013	Unknown	Word Doc	Digital	ORS_Design_Disclaimer.docx	Feb-11	Other	As requested	Reliance on Information, Methodologies and Methods contained in any of the One Room Shelter designs - our liability	Arup (Team)	sharepoint	
482	09 Oct 2013	World Bank	Report	PDF	SaferHomesStrongerCommunitites.pdf	Feb-11	Other	As requested	Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters	Arup (Team)	sharepoint	
483	09 Oct 2013	Unknown	Other	Digital	T_Shelter_Example_Maha.JPG	Feb-11	Other	As requested	Photograph of traditional shelter	Arup (Team)	sharepoint	
484	09 Oct 2013	Unknown	Word Doc	Digital	Transitional_Shelter_Comparison.docx	Feb-11	Other	As requested	What Shelter is being Provided in Pakistan?	Arup (Team)	sharepoint	
485	09 Oct 2013	Unknown	Word Doc	Digital	Transitional_Shelter_Definition.docx	Feb-11	Other	As requested	Shelter/settlement definitions	Arup (Team)	sharepoint	
486	09 Oct 2013	Unknown	Word Doc	Digital	Transitional_Shelter_Description_v2.docx	Feb-11	Other	As requested	What Shelter is being Provided in Pakistan? (v2)	Arup (Team)	sharepoint	
487	09 Oct 2013	Unknown	Excel File	Digital	130909 - SC 2011_4W.xlsx	Sep-13	Other	As requested	Who is doing What, When and Where (4W) - Monson 2012 early recovery	Arup (Team)	sharepoint	
488	09 Oct 2013	IOM	Other	Digital	DSC01240.JPG	Mar-13	Other	As requested	Photo of brick shelter external	Arup (Team)	sharepoint	
489	09 Oct 2013	IOM	Other	Digital	DSC01277.JPG	Mar-13	Other	As requested	Photo of roof beams	Arup (Team)	sharepoint	
490	09 Oct 2013	IOM	Other	Digital	DSC01310.JPG	Mar-13	Other	As requested	Photo of cement work	Arup (Team)	sharepoint	
491	09 Oct 2013	IOM	Other	Digital	DSC01323.JPG	Mar-13	Other	As requested	Photo of measuring	Arup (Team)	sharepoint	
492	09 Oct 2013	IOM	Other	Digital	DSC02226.JPG	Mar-13	Other	As requested	Photo of foundation works	Arup (Team)	sharepoint	
493	09 Oct 2013	IOM	Other	Digital	DSC02237.JPG	Mar-13	Other	As requested	Photo of foundation works (2)	Arup (Team)	sharepoint	

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
494	09 Oct 2013	IOM	Other	Digital	DSC02391.JPG	Mar-13	Other	As requested	Photo of concrete skimming	Arup (Team)	sharepoint	
495	09 Oct 2013	IOM	Other	Digital	DSC02447.JPG	Mar-13	Other	As requested	Photo of drain lining	Arup (Team)	sharepoint	
496	09 Oct 2013	IOM	Other	Digital	DSC02510.JPG	Mar-13	Other	As requested	Photo of drain lining (2)	Arup (Team)	sharepoint	
497	09 Oct 2013	IOM	Other	Digital	DSC02979.JPG	Mar-13	Other	As requested	Photo of roofing work	Arup (Team)	sharepoint	
498	09 Oct 2013	IOM	Other	Digital	DSC02981.JPG	Mar-13	Other	As requested	Photo of roofing work (2)	Arup (Team)	sharepoint	
499	09 Oct 2013	IOM	Other	Digital	DSC03022.JPG	Mar-13	Other	As requested	Photo of roofing work (3)	Arup (Team)	sharepoint	
500	09 Oct 2013	IOM	Other	Digital	DSC03030.JPG	Mar-13	Other	As requested	Photo of roofing beams	Arup (Team)	sharepoint	
501	09 Oct 2013	IOM	Other	Digital	DSC03050.JPG	Mar-13	Other	As requested	Photo of shelter (near completion)	Arup (Team)	sharepoint	
502	09 Oct 2013	IOM	Other	Digital	DSC03051.jpg	Mar-13	Other	As requested	Photo of roofing beams (2)	Arup (Team)	sharepoint	
503	09 Oct 2013	IOM	Other	Digital	DSC03285.JPG	Mar-13	Other	As requested	Photo of roof lining	Arup (Team)	sharepoint	
504	09 Oct 2013	IOM	Other	Digital	DSC03323.JPG	Mar-13	Other	As requested	Photo of completed foundations	Arup (Team)	sharepoint	
505	09 Oct 2013	IOM	Other	Digital	DSC03859.JPG	Mar-13	Other	As requested	Photo of roof beams/	Arup (Team)	sharepoint	
506	09 Oct 2013	IOM	Other	Digital	DSC03868.JPG	Mar-13	Other	As requested	Side view photo of shelter	Arup (Team)	sharepoint	
507	09 Oct 2013	IOM	Other	Digital	DSC03871.JPG	Mar-13	Other	As requested	Front view photo of shelter	Arup (Team)	sharepoint	
508	09 Oct 2013	IOM	Other	Digital	DSC03876.JPG	Mar-13	Other	As requested	Rear view photo of shelter	Arup (Team)	sharepoint	
509	09 Oct 2013	IOM	Other	Digital	DSC03890.JPG	Mar-13	Other	As requested	View of shelter breeze blocks	Arup (Team)	sharepoint	
510	09 Oct 2013	IOM	Other	Digital	DSC03892.JPG	Mar-13	Other	As requested	Side view of shelter breeze blocks	Arup (Team)	sharepoint	
511	09 Oct 2013	IOM	Other	Digital	DSC03903.JPG	Mar-13	Other	As requested	View of stone shelter	Arup (Team)	sharepoint	
512	09 Oct 2013	IOM	Other	Digital	DSC03910.JPG	Mar-13	Other	As requested	Photo of stone shelter interior	Arup (Team)	sharepoint	
513	09 Oct 2013	Cesvi	Word Doc	Digital	Annex-3 BoQ and Tehnical Detail.docx	Apr-12	Other	As requested	Technical details and plans for shelter	Arup (Team)	sharepoint	
514	09 Oct 2013	Cesvi	Drawing	PDF	REvised Shelter Design.pdf	May-12	Other	As requested	Revised shelter plans and tech details	Arup (Team)	sharepoint	
515	09 Oct 2013	Cesvi	Excel File	Digital	SDI RF Shelter BOQ Revised 8 May.xls	May-12	Other	As requested	Proposed Shelter Bill of Quantity (BoQ)	Arup (Team)	sharepoint	
516	09 Oct 2013	Cesvi	Word Doc	Digital	Annex-3 BoQ and Tehnical Detail.docx	May-12	Other	As requested	Technical details and plans for shelter (update)	Arup (Team)	sharepoint	
517	09 Oct 2013	CRDO	Drawing	Digital	Foundation, Walls, Roof.jpg	Mar-13	Other	As requested	CRDO proposed mud shelter design - roof, foundations	Arup (Team)	sharepoint	
518	09 Oct 2013	CRDO	Drawing	Digital	Shelter - Foundation.jpg	Mar-13	Other	As requested	CRDO proposed mud shelter design - foundation plans	Arup (Team)	sharepoint	
519	09 Oct 2013	CRDO	Drawing	Digital	Shelter - Roof Strctre.jpg	Mar-13	Other	As requested	CRDO proposed mud shelter design - roof beam structure	Arup (Team)	sharepoint	
520	09 Oct 2013	CRDO	Excel File	Digital	Shelter Boq.xlsx	Mar-13	Other	As requested	BOQ Of Mud Shelter	Arup (Team)	sharepoint	
521	09 Oct 2013	CRDO	Drawing	Digital	Shelter-Wall Strctre.jpg	Mar-13	Other	As requested	CRDO proposed mud shelter design - wall structure	Arup (Team)	sharepoint	
522	09 Oct 2013	Handicap International	Report	PDF	Handicap International Shelter Program Summary.pdf	Jun-12	Other	As requested	Shelter Construction Project Project Summary	Arup (Team)	sharepoint	
523	09 Oct 2013	HANDs	Drawing	Digital	1.jpg	Apr-12	Other	As requested	Brick shelter render	Arup (Team)	sharepoint	
524	09 Oct 2013	HANDs	Drawing	Digital	2.jpg	Apr-12	Other	As requested	Brick shelter render (front view)	Arup (Team)	sharepoint	
525	09 Oct 2013	HANDs	Drawing	Digital	3.jpg	Apr-12	Other	As requested	Brick shelter render (side view)	Arup (Team)	sharepoint	
526	09 Oct 2013	HANDs	Drawing	Digital	4.jpg	Apr-12	Other	As requested	Brick shelter render (rear view)	Arup (Team)	sharepoint	
527	09 Oct 2013	HANDs	Drawing	Digital	5.jpg	Apr-12	Other	As requested	Brick shelter render (rear view)	Arup (Team)	sharepoint	
528	09 Oct 2013	HANDs	Drawing	Digital	image001.png	Apr-12	Other	As requested	HANDs logo	Arup (Team)	sharepoint	
529	09 Oct 2013	HANDs	Excel File	Digital	One Room Shelter.xlsx	Apr-12	Other	As requested	ONE ROOM SHELTER PROJECT - cost estimate of two rooms for two families	Arup (Team)	sharepoint	
530	09 Oct 2013	HANDs	Drawing	PDF	plan.pdf	Apr-12	Other	As requested	Shelter floorplan	Arup (Team)	sharepoint	
531	09 Oct 2013	HDF	Other	Digital	Siddiqe Madoo- Model Village- 2012.ppt	Apr-12	Other	As requested	Presentation: HDF Model Village, Siddique Maddo/Kair Muhammad Maddo	Arup (Team)	sharepoint	
532	09 Oct 2013	IOM	Drawing	Digital	01 Sindhi.jpg	Mar-13	Other	As requested	Shelter process diagram - Sindhi	Arup (Team)	sharepoint	
533	09 Oct 2013	IOM	Drawing	Digital	02 Sindhi.jpg	Mar-13	Other	As requested	Shelter process diagram - Sindhi (2)	Arup (Team)	sharepoint	
534	09 Oct 2013	People in Need	Excel File	Digital	PIN plans for ORS implementations.xlsx	Jun-12	Other	As requested	PEOPLE IN NEED-CZ (PIN)-PLANS FOR ORS IMPLEMENTATIONS: Tandoo Allah Yar	Arup (Team)	sharepoint	
535	09 Oct 2013	PVDP	Excel File	Digital	Cost per Shelter(1).xls	Feb-12	Other	As requested	Cost per shelter table	Arup (Team)	sharepoint	
536	09 Oct 2013	PVDP	Other	Digital	PVDP Shelter Policy cover.jpg	Apr-13	Other	As requested	PVDP Shelter Policy - Cover	Arup (Team)	sharepoint	
537	09 Oct 2013	PVDP	Word Doc	Digital	Shelter Policy of PVDP.docx	Feb-12	Other	As requested	PVDP Shelter Policy	Arup (Team)	sharepoint	
538	09 Oct 2013	Save the Children	Drawing	PDF	Bamboo Square Shelter Foundation Plan 25-01-12.pdf	Jan-12	Other	As requested	Foundation and plinth plan of DRR shelter using vernacular methodologies	Arup (Team)	sharepoint	
539	09 Oct 2013	Save the Children	Drawing	PDF	Bamboo Square Shelter Front Elev. 25-01-12.pdf	Jan-12	Other	As requested	Front elevation plan using vernacular technologies	Arup (Team)	sharepoint	
540	09 Oct 2013	Save the Children	Drawing	PDF	Bamboo Square Shelter Rear Elev. 25-01-12.pdf	Jan-12	Other	As requested	Rear elevation plan using vernacular technologies	Arup (Team)	sharepoint	
541	09 Oct 2013	Save the Children	Drawing	PDF	Bamboo Square Shelter Roof Plan 25-01-12.pdf	Jan-12	Other	As requested	Roof plan using vernacular technologies	Arup (Team)	sharepoint	
542	09 Oct 2013	Save the Children	Drawing	PDF	Bamboo Square Shelter Side Elev. 25-01-12.pdf	Jan-12	Other	As requested	Side elevation using vernacular technologies	Arup (Team)	sharepoint	
543	09 Oct 2013	SDI	Drawing	PDF	REvised Shelter Design(1).pdf	May-12	Other	As requested	Revised shelter plans and tech details	Arup (Team)	sharepoint	
544	09 Oct 2013	SDI	Word Doc	Digital	SDI RF Shelter Proposal 4 May Revised(1).doc	Jan-12	Other	As requested	CONCERN WORLDWIDE PAKISTAN RAPID Fund (Responding to Pakistan's internally Displaced) - FUNDING PROPOSAL FORM	Arup (Team)	sharepoint	
545	09 Oct 2013	SDI	Drawing	PDF	SDI_OFDA_Design.pdf	Nov-12	Other	As requested	Shelter plans and tech details	Arup (Team)	sharepoint	
546	09 Oct 2013	SDI	Other	Digital	SDI_OFDA_Presentation on shelter.ppt	Nov-12	Other	As requested	Sindh project presentation	Arup (Team)	sharepoint	
547	09 Oct 2013	SDI	Drawing	Digital	Back View.jpg	Mar-13	Other	As requested	Rear view shelter plans	Arup (Team)	sharepoint	
548	09 Oct 2013	SDI	Drawing	Digital	Front View.jpg	Apr-13	Other	As requested	Front view shelter plans	Arup (Team)	sharepoint	
549	09 Oct 2013	SDI	Drawing	Digital	Roof plan.jpg	Apr-13	Other	As requested	Roof shelter plans	Arup (Team)	sharepoint	
550	09 Oct 2013	SDI	Drawing	Digital	Side view- Shortwalls.jpg	Apr-13	Other	As requested	Side view plans	Arup (Team)	sharepoint	
551	09 Oct 2013	SDI	Excel File	Digital	BoQ.xls	May-13	Other	As requested	Provision of Transitional Shelter to the flood affected families of UC Pithoro, District Umerkot - BoQ	Arup (Team)	sharepoint	
552	09 Oct 2013	SDI	Drawing	Digital	Back View.jpg	Mar-13	Other	As requested	Rear view shelter plans (revised)	Arup (Team)	sharepoint	
553	09 Oct 2013	SDI	Drawing	Digital	Front View.jpg	Apr-13	Other	As requested	Front view shelter plans (revised)	Arup (Team)	sharepoint	
554	09 Oct 2013	SDI	Drawing	Digital	Roof plan.jpg	Apr-13	Other	As requested	Roof shelter plans (revised)	Arup (Team)	sharepoint	
555	09 Oct 2013	SDI	Drawing	Digital	Side view- Shortwalls.jpg	Mar-13	Other	As requested	Side view plans (revised)	Arup (Team)	sharepoint	
556	09 Oct 2013	SDI	Excel File	Digital	BoQ.xls	May-13	Other	As requested	Provision of Transitional Shelter to the flood affected families of UC Pithoro, District Umerkot - BoQ (revised)	Arup (Team)	sharepoint	
557	09 Oct 2013	SDI	Excel File	Digital	BoQ.xls	Apr-13	Other	As requested	Provision of Transitional Shelter to the flood affected families of UC Pithoro, District Umerkot - BoQ (revised)	Arup (Team)	sharepoint	
558	09 Oct 2013	SEAD foundation	Other	Digital	Sustainable Economic and Agriculture Development Foundation.pptx	Feb-12	Other	As requested	Presentation: Sustainable Economic and Agriculture Development Foundation (SEAD Foundation) Talhar-Badin	Arup (Team)	sharepoint	
559	09 Oct 2013	IASC	Other	Digital	101220_Poster_Ed_final.jpg	Mar-13	Other	As requested	What to do to protect your home from floods poster	Arup (Team)	sharepoint	
560	09 Oct 2013	Unknown	Other	Digital	CRS_Shelter Strategy.ppt	Feb-12	Other	As requested	Presentation: laandhi shelter in sindh after flood 2011	Arup (Team)	sharepoint	
561	09 Oct 2013	IOM	Report	Digital	DTM_DataCollection_Strategy_120321.docx	Mar-12	Other	As requested	Displacement Tracking Matrix - Data Collection Strategy - IOM Islamabad - 20th March 2012	Arup (Team)	sharepoint	
562	09 Oct 2013	Unknown	Excel File	Digital	Final BoQ for shelter (Mirpur Khas).xls	Mar-12	Other	As requested	Shelter BoQ for Sindh (Mirpur Khas)	Arup (Team)	sharepoint	
563	09 Oct 2013	Unknown	Map	PDF	HCommMap.pdf	Mar-12	Other	As requested	Map of Pakistan with provinces	Arup (Team)	sharepoint	
564	09 Oct 2013	Unknown	Drawing	Digital	Lower Sindh Shelter IP.Annex G.Landhi Shelter design.doc	Mar-12	Other	As requested	SHELTER (Landhi) DRAWING (Sindh 2011)	Arup (Team)	sharepoint	
565	09 Oct 2013	IASC	Other	Digital	Shelter_Cluster_2012_ShelterProgramPhotos.pptx	Sep-12	Other	As requested	Presentation: Shelter Cluster - Examples of One Room Shelter, Transitional Shelters and Roofing Kits	Arup (Team)	sharepoint	
566	09 Oct 2013	Unknown	Word Doc	Digital	Shelter map.docx	Jun-12	Other	As requested	Construction of Shelters - information pack and plans	Arup (Team)	sharepoint	
567	09 Oct 2013	IOM	Report	PDF	SC Key Doc Compendium small.pdf	Sep-13	Other	As requested	Shelters - compedium of key documents, Pakistan Shelter Cluster	Arup (Team)	sharepoint	
568	09 Oct 2013	Unknown	Excel File	Digital	130827 - SC 2012_4W.xlsx	Aug-13	Other	As requested	Who is doing What, When and Where (4W) - Monson 2012 early recovery	Arup (Team)	sharepoint	
569	09 Oct 2013	Unknown	Other	PDF	20120926_DFID_after the rains - 2011 shelters.pdf	Sep-12	Other	As requested	Presentation: what we did after the rains	Arup (Team)	sharepoint	
570	09 Oct 2013	UN Habitat, NDMA	Other	PDF	20121003_UN_Habitat_District_Jaffarabad_Flood_2012_Oct_2012.pdf	Oct-12	Other	As requested	Presentation: Baluchistan Update 2012: Jaffarabad and Naseerabad	Arup (Team)	sharepoint	
571	09 Oct 2013	ACTED	Other	PDF	20121107_ACTED_Shelter_North_Sindh.pdf	Nov-12	Other	As requested	Presentation: ACTED Shelter - North Sindh	Arup (Team)	sharepoint	
572	09 Oct 2013	IOM	Other	PDF	20121107_IOM_Damage Assessment.pdf	Nov-12	Other	As requested	Presentation: One room shelter project - damage report key findings	Arup (Team)	sharepoint	
573	09 Oct 2013	UN Habitat, NDMA	Report	PDF	Earthan Guidelines.pdf	Jan-12	Other	As requested	Technical Specification for Earthen buildings in flood affected areas (seismic zone 2B and lower) for one storey height.	Arup (Team)	sharepoint	
574	09 Oct 2013	UN Habitat, NDMA	Report	PDF	Loh Kaat guidelines - 30DEC2010.pdf	Jan-12	Other	As requested	Technical Specification for Loh Kat (Timber Pole) House in Flood Affected Areas (Seismic Zone 2B and Lower) for Single Storey	Arup (Team)	sharepoint	
575	09 Oct 2013	UN Habitat, NDMA	Report	PDF	Masonry Guidelines.pdf	Jan-12	Other	As requested	Technical Specification for masonry house in flood affected areas (seismic zone 2B and lower) up to two storey height.	Arup (Team)	sharepoint	
576	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	SC 2011 Overview Shelters 2010.xlsx	Jan-12	Other	As requested	Shelter cost/labour requirements	Arup (Team)	sharepoint	
577	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	SC 2011 Overview Shelters 2010_v2.xlsx	Jan-12	Other	As requested	Shelter cost/labour requirements v2	Arup (Team)	sharepoint	
578	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	SC 2011 Overview Shelters 2010_v3.xlsx	Jan-12	Other	As requested	Shelter cost/labour requirements v3	Arup (Team)	sharepoint	
579	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	SC 2011 Overview Shelters 2010_v4.xlsx	Feb-12	Other	As requested	Shelter cost/labour requirements v4	Arup (Team)	sharepoint	
580	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	A.1.1.xlsx	Apr-11	Other	As requested	Adobe house detail requirements/specs/drawings (1)	Arup (Team)	sharepoint	
581	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	A.1.2.xlsx	Apr-11	Other	As requested	Adobe house detail requirements/specs/drawings (2)	Arup (Team)	sharepoint	
582	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	A.1.3.xlsx	Apr-11	Other	As requested	Adobe house detail requirements/specs/drawings (3)	Arup (Team)	sharepoint	
583	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	A.1.4.xlsx	Apr-11	Other	As requested	Adobe house detail requirements/specs/drawings (4)	Arup (Team)	sharepoint	
584	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	A.2.1.xlsx	Apr-11	Other	As requested	Adobe house detail requirements/specs/drawings (5)	Arup (Team)	sharepoint	
585	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	A.2.2.xlsx	Apr-11	Other	As requested	Adobe house detail requirements/specs/drawings (6)	Arup (Team)	sharepoint	
586	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	A.2.3.xlsx	Apr-11	Other	As requested	Adobe house detail requirements/specs/drawings (7)	Arup (Team)	sharepoint	
587	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	A.2.4.xlsx	Apr-11	Other	As requested	Adobe house detail requirements/specs/drawings (8)	Arup (Team)	sharepoint	
588	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.4.1.xlsx	Dec-11	Other	As requested	Adobe house detail requirements/specs/drawings (8)	Arup (Team)	sharepoint	
589	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.4.2.xlsx	Dec-11	Other	As requested	Brick masonry house detail requirements/specs/drawings (1)	Arup (Team)	sharepoint	
590	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.5.1.xlsx	Dec-11	Other	As requested	Brick masonry house detail requirements/specs/drawings (2)	Arup (Team)	sharepoint	

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
591	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.5.2.xlsx	Dec-11	Other	As requested	Brick masonry house detail requirements/specs/drawings (3)	Arup (Team)	sharepoint	
592	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.6.1.xlsx	Dec-11	Other	As requested	Brick masonry house detail requirements/specs/drawings (4)	Arup (Team)	sharepoint	
593	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.6.2.xlsx	Dec-11	Other	As requested	Brick masonry house detail requirements/specs/drawings (5)	Arup (Team)	sharepoint	
594	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.1.1.xlsx	Apr-11	Other	As requested	Brick masonry mud mortar detail requirements/specs/drawings (1)	Arup (Team)	sharepoint	
595	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.1.2.xlsx	Mar-11	Other	As requested	Brick masonry mud mortar detail requirements/specs/drawings (2)	Arup (Team)	sharepoint	
596	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.2.1.xlsx	Apr-11	Other	As requested	Brick masonry mud mortar detail requirements/specs/drawings (3)	Arup (Team)	sharepoint	
597	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.2.2.xlsx	Mar-11	Other	As requested	Brick masonry mud mortar detail requirements/specs/drawings (4)	Arup (Team)	sharepoint	
598	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.3.1.xlsx	Apr-11	Other	As requested	Brick masonry mud mortar detail requirements/specs/drawings (5)	Arup (Team)	sharepoint	
599	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	B.3.2.xlsx	Mar-11	Other	As requested	Brick masonry mud mortar detail requirements/specs/drawings (6)	Arup (Team)	sharepoint	
600	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	L.1.xlsx	Mar-11	Other	As requested	Loh-kaat house detail requirements/specs/drawings (1)	Arup (Team)	sharepoint	
601	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	L.2.xlsx	Mar-11	Other	As requested	Loh-kaat house detail requirements/specs/drawings (2)	Arup (Team)	sharepoint	
602	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	L.3.xlsx	Mar-11	Other	As requested	Loh-kaat house detail requirements/specs/drawings (3)	Arup (Team)	sharepoint	
603	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	M.1.xlsx	Apr-11	Other	As requested	Mud house detail requirements/specs/drawings (1)	Arup (Team)	sharepoint	
604	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	M.2.xlsx	Apr-11	Other	As requested	Mud house detail requirements/specs/drawings (2)	Arup (Team)	sharepoint	
605	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	M.3.xlsx	Apr-11	Other	As requested	Mud house detail requirements/specs/drawings (3)	Arup (Team)	sharepoint	
606	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	M.4.xlsx	Apr-11	Other	As requested	Mud house detail requirements/specs/drawings (4)	Arup (Team)	sharepoint	
607	09 Oct 2013	UN Habitat, NDMA	Excel File	Digital	Desgin type matrix - V03.xlsx	Dec-11	Other	As requested	Summary of different one room shelter options matrix	Arup (Team)	sharepoint	
608	06 Nov 2013	Indus Resource Centre	Excel File	Digital	4. 121108 ECHO VI Shelter design for northern sindh with CFW revised06102012 Kacha1.xls		Other	As requested	Shelter BOQs - North Sindh	Arup (Team)	sharepoint	
609	06 Nov 2013	Indus Resource Centre	Excel File	PDF	Projects Details.pdf		Other	As requested	Projects Details	Arup (Team)	sharepoint	
610	06 Nov 2013	Indus Resource Centre	Word Doc	Digital	Selection Criteria.docx		Other	As requested	Beneficiaries selection criteria	Arup (Team)	sharepoint	
611	06 Nov 2013	Indus Resource Centre	Drawing	PDF	Shelter Drawing.pdf		Other	As requested	Shelter Drawigns - Plan, elevations and section	Arup (Team)	sharepoint	
612	07 Nov 2013	DFID	Excel File	Digital	carbon and energy savings table dfid shelter april 2013.xlsx		Other	As requested	Carbon and Environment impact - shelter programmes in Pakistan	Arup (Team)	sharepoint	
613	07 Nov 2013	DFID	Word Doc	Digital	File closing note UNHabitat.doc		Other	As requested	Final evaluation/ file closing note	Arup (Team)	sharepoint	
614	07 Nov 2013	DFID	Other	PDF	Shelter Center presentation - May 2012.pdf		Other	As requested	Environment and post-disater - presentation of shelter options	Arup (Team)	sharepoint	
615	09 Nov 2013	GIZ	Drawing	PDF	Ceiling Plan for HIP ROOF.pdf		Other	As requested	Technical drawing - Ceiling Plan for HIP ROOF	Arup (Team)	sharepoint	
616	09 Nov 2013	GIZ	Drawing	PDF	Column and Footing Hip Roof.pdf		Other	As requested	Technical drawing - Column and Footing Hip Roof	Arup (Team)	sharepoint	
617	09 Nov 2013	GIZ	Drawing	PDF	Detail Plan Hip Roof.pdf		Other	As requested	Technical drawing - Detail Plan Hip Roof	Arup (Team)	sharepoint	
618	09 Nov 2013	GIZ	Drawing	PDF	Elevation Hip truss-Model.pdf		Other	As requested	Technical drawing - Elevation Hip truss-Model	Arup (Team)	sharepoint	
619	09 Nov 2013	GIZ	Drawing	PDF	Foundation Plan Hip Roof.pdf		Other	As requested	Technical drawing - Foundation Plan Hip Roof	Arup (Team)	sharepoint	
620	09 Nov 2013	GIZ	Drawing	PDF	Laterine for Hip Roof.pdf		Other	As requested	Technical drawing - Laterine for Hip Roof	Arup (Team)	sharepoint	
621	09 Nov 2013	GIZ	Drawing	PDF	Roof Beam Long SectionHip Roof.pdf		Other	As requested	Technical drawing - Roof Beam Long SectionHip Roof	Arup (Team)	sharepoint	
622	09 Nov 2013	GIZ	Drawing	PDF	Sanitation Plan Hip Roof.pdf		Other	As requested	Technical drawing - Sanitation Plan Hip Roof	Arup (Team)	sharepoint	
623	09 Nov 2013	GIZ	Drawing	PDF	Section AA for Hip Roof House.pdf		Other	As requested	Technical drawing - Section AA for Hip Roof House	Arup (Team)	sharepoint	
624	09 Nov 2013	GIZ	Drawing	PDF	Section BB for Hip Roof.pdf		Other	As requested	Technical drawing - Section BB for Hip Roof	Arup (Team)	sharepoint	
625	09 Nov 2013	GIZ	Drawing	PDF	Septic and Soakage Hip Roof.pdf		Other	As requested	Technical drawing - Septic and Soakage Hip Roof	Arup (Team)	sharepoint	
626	09 Nov 2013	GIZ	Drawing	PDF	Structural x sections Hip Roof.pdf		Other	As requested	Technical drawing - Structural x sections Hip Roof	Arup (Team)	sharepoint	
627	09 Nov 2013	GIZ	Drawing	PDF	TIE BEAM JOIST PLAN for HIP ROOF.pdf		Other	As requested	Technical drawing - TIE BEAM JOIST PLAN for HIP ROOF	Arup (Team)	sharepoint	
628	09 Nov 2013	GIZ	Drawing	PDF	Truss Plan Hip truss-Model.pdf		Other	As requested	Technical drawing - Truss Plan Hip truss-Model	Arup (Team)	sharepoint	
629	09 Nov 2013	GIZ	Drawing	PDF	Wall Reinforcement Hip truss-Model.pdf		Other	As requested	Technical drawing - Wall Reinforcement Hip truss-Model	Arup (Team)	sharepoint	
630	09 Nov 2013	GIZ	Other	Digital	3. GIZ DETA PAK - Flood 21 GIZ -ACTED Modelhouse Under Construction January 2011 a.jpg		Other	As requested	photo of model house under construction	Arup (Team)	sharepoint	
631	09 Nov 2013	GIZ	Other	PDF	construction in progress-MRP housing in Pakistan 2011.pdf		Other	As requested	construction in progress-MRP housing in Pakistan 2011 - photos	Arup (Team)	sharepoint	
632	09 Nov 2013	GIZ	Other	PDF	Factsheet GIZ MRP Pakistan v9 13.06.12 oh.pdf		Other	As requested	Report - Safeguarding the Livelihoods of Flood Victims and Returning Internally Displaced Persons in Malakand Region	Arup (Team)	sharepoint	
633	09 Nov 2013	GIZ	Other	PDF	FD 33 HIP Roof Pictures.pdf		Other	As requested	Photos and description of hip roof houses- various villages	Arup (Team)	sharepoint	
634	09 Nov 2013	GIZ	Report	PDF	GIZ MRP Overview and Mode of Delivery v11 24.08.11 awoh.pdf		Other	As requested	Report - Safeguarding the Livelihoods of Flood Victims and Returning Internally Displaced Persons in Malakand Region - Malakand Rehabilitation Project (MRP) - Executive Summary	Arup (Team)	sharepoint	
635	09 Nov 2013	GIZ	Report	PDF	GIZ_FD 24-model_houses_Dir_Upper_and_Lower-_Final_Report-to_submit-commented asghar-14.3..pdf		Other	As requested	ACTED - Construction of two model houses for flood-affected households in Dir Upper and Lower - KPK Province	Arup (Team)	sharepoint	
636	09 Nov 2013	GIZ	Other	PDF	GTZ-model house examples 23.08.11 aw.pdf		Other	As requested	Shelter Haiti (T-shelters)	Arup (Team)	sharepoint	
637	09 Nov 2013	GIZ	Report	PDF	Manual for Infrastructure Projects.pdf		Other	As requested	Manual for infrastructure projects	Arup (Team)	sharepoint	
638	09 Nov 2013	GIZ	Report	Digital	MIDTERM REVIEWFD16 ver09 10 08 11 ohaaoh.ppt		Other	As requested	Presentation - Midterm review: Project FD 16 – Construction of 105 houses	Arup (Team)	sharepoint	
639	09 Nov 2013	GIZ	Other	Digital	PIC 15.jpg		Other	As requested	Photo house	Arup (Team)	sharepoint	
640	09 Nov 2013	GIZ	Other	Digital	PIC 16.JPG		Other	As requested	Photo house	Arup (Team)	sharepoint	
641	11 Nov 2013	PREPARED	Drawing	Digital	One Room Shelter PREPARED-ERF Jacobabad-Ground Plan.pdf		Other	As requested	Technical drawings - One Room Shelter PREPARED-ERF Jacobabad- Ground Plan	Arup (Team)	sharepoint	
642	11 Nov 2013	PREPARED	Drawing	Digital	One Room Shelter PREPARED-ERF Jacobabad-Front Elevation.pdf		Other	As requested	Technical drawings - One Room Shelter PREPARED-ERF Jacobabad-Front Elevation	Arup (Team)	sharepoint	
643	11 Nov 2013	PREPARED	Drawing	PDF	One Room Shelter PREPARED-ERF Jacobabad-Side Elevation.pdf		Other	As requested	Technical drawings - One Room Shelter PREPARED-ERF Jacobabad-Side Elevation	Arup (Team)	sharepoint	
644	11 Nov 2013	PREPARED	Excel File	Digital	Revised BoQ Transitional shelter PREPARED-.xlsx		Other	As requested	Revised BoQ Transitional shelter PREPARED	Arup (Team)	sharepoint	
645	11 Nov 2013	PREPARED	Excel File	Digital	BoQ Transitional shelter PREPARED-Jacobabad.xlsx		Other	As requested	BoQ Transitional shelter PREPARED-Jacobabad	Arup (Team)	sharepoint	
646	11 Nov 2013	PREPARED	Other	PDF	Front Elevation-Shelter Design PREPARED.pdf		Other	As requested	Technical drawings - Front Elevation-Shelter Design PREPARED	Arup (Team)	sharepoint	
647	11 Nov 2013	PREPARED	Other	PDF	Ground Plan-Shelter Design PREPARED.pdf		Other	As requested	Technical drawings - Ground Plan-Shelter Design PREPARED.pdf	Arup (Team)	sharepoint	
648	11 Nov 2013	PREPARED	Other	PDF	Short section-Shelter Design PREPARED.pdf		Other	As requested	Technical drawings - Short section-Shelter Design PREPARED	Arup (Team)	sharepoint	
649	11 Nov 2013	PREPARED	Other	PDF	12 11 30.Shelter IP.AnnexG.TS design S1.pdf		Other	As requested	Technical drawings - ground floor plan and photos	Arup (Team)	sharepoint	
650	11 Nov 2013	PREPARED	Other	PDF	12 11 30.Shelter IP.AnnexG.TS design S2.pdf		Other	As requested	Technical drawings - elevation and photos	Arup (Team)	sharepoint	
651	11 Nov 2013	PREPARED	Other	PDF	12 11 30.Shelter IP.AnnexG.TS design S3.pdf		Other	As requested	Technical drawings - ground floor plan	Arup (Team)	sharepoint	
652	11 Nov 2013	PREPARED	Other	PDF	12 11 30.Shelter IP.AnnexG.TS design S4.pdf		Other	As requested	Technical drawings - short section and roof details	Arup (Team)	sharepoint	
653	11 Nov 2013	PREPARED	Excel File	Digital	BOQ 2012 Transitional Shelter Sindh_UPDATED rev C.xlsx		Other	As requested	BOQ 2012 Transitional Shelter Sindh_UPDATED rev C	Arup (Team)	sharepoint	
654	12 Nov 2013	ACTED	Other	Other	57D0B43F.tmp		Other	As requested		Arup (Team)	sharepoint	
655	12 Nov 2013	ACTED	Drawing	PDF	A-1 ACTED Shelter Design Fron view.pdf		Other	As requested	Technical drawings - A-1 ACTED Shelter Design Fron view	Arup (Team)	sharepoint	
656	12 Nov 2013	ACTED	Drawing	PDF	A-1 ACTED Shelter Design Plan at 4ft level.pdf		Other	As requested	Technical drawings. A-1 ACTED Shelter Design Plan at 4ft level	Arup (Team)	sharepoint	
657	12 Nov 2013	ACTED	Other	PDF	A-1 ACTED Shelter Design Section AA.pdf		Other	As requested	Technical drawings - A-1 ACTED Shelter Design Section AA	Arup (Team)	sharepoint	
658	12 Nov 2013	ACTED	Excel File	Digital	A-1 ACTED ORS BOQ Brick Masonary.xlsx		Other	As requested	A-1 ACTED ORS BOQ Brick Masonary	Arup (Team)	sharepoint	
659	12 Nov 2013	ACTED	Drawing	PDF	A-1 ACTED ORS design single Doors.pdf		Other	As requested	3D model - A-1 ACTED ORS design single Doors	Arup (Team)	sharepoint	
660	12 Nov 2013	ACTED	Drawing	PDF	A-2 ORS fired bricks 3D view.pdf		Other	As requested	A-2 ORS fired bricks 3D view	Arup (Team)	sharepoint	
661	12 Nov 2013	ACTED	Excel File	Digital	A-2 ORS fired bricks.xlsx		Other	As requested	A-2 ORS fired bricks - BoQs	Arup (Team)	sharepoint	
662	12 Nov 2013	ACTED	Drawing	PDF	B-1 ACTED loh kot shelter elevation.pdf		Other	As requested	Technical drawings - B-1 ACTED loh kot shelter elevation	Arup (Team)	sharepoint	
663	12 Nov 2013	ACTED	Drawing	PDF	B-1 ACTED loh kot shelter Plan.pdf		Other	As requested	Technical drawings -B-1 ACTED loh kot shelter Plan	Arup (Team)	sharepoint	
664	12 Nov 2013	ACTED	Drawing	PDF	B-1 ACTED loh kot shelter side veiw.pdf		Other	As requested	Technical drawings - B-1 ACTED loh kot shelter side veiw	Arup (Team)	sharepoint	
665	12 Nov 2013	ACTED	Drawing	PDF	B-2 shelter changes in ridge beam.pdf		Other	As requested	B-2 shelter changes in ridge beam.pdf	Arup (Team)	sharepoint	
666	12 Nov 2013	ACTED	Excel File	Digital	B-1 ACTED shelters BOQ loh kot shelter.xlsx		Other	As requested	B-1 ACTED shelters BOQ loh kot shelter	Arup (Team)	sharepoint	
667	12 Nov 2013	ACTED	Excel File	Digital	B-02 BOQ Loh kot shelters .xlsx		Other	As requested	B-02 BOQ Loh kot shelters	Arup (Team)	sharepoint	
668	12 Nov 2013	ACTED	Drawing	PDF	B-2 ACTED loh kot shelters Drawing completed 3d View.pdf		Other	As requested	B-2 ACTED loh kot shelters Drawing completed 3d View	Arup (Team)	sharepoint	
669	12 Nov 2013	ACTED	Drawing	PDF	B-2 ACTED loh kot shelters Drawing frame work drawing.pdf		Other	As requested	Technical drawings -B-2 ACTED loh kot shelters Drawing frame work drawing	Arup (Team)	sharepoint	
670	12 Nov 2013	ACTED	Drawing	PDF	B-2 ACTED loh kot shelters Drawing masonary work drawngs.pdf		Other	As requested	Technical drawings -B-2 ACTED loh kot shelters Drawing masonary work drawngs	Arup (Team)	sharepoint	
671	12 Nov 2013	ACTED	Word Doc	Digital	121210 ACTED North Sindh Shelter Assessment.docx		Other	As requested	Report - 121210 ACTED North Sindh Shelter Assessment	Arup (Team)	sharepoint	
672	12 Nov 2013	ACTED	Excel File	Digital	ACTED completed shelter projects summary.xlsx		Other	As requested	ACTED completed shelter projects summary	Arup (Team)	sharepoint	
673	26 Nov 2013	Qatar Charity	Excel File	Digital	BOQ_of_shelter DR.xls		Other	As requested	Summary of Shelter Cost (Size: 14ft x 16ft) and Detail Estimate of one Room shelter (16' x 14')	Arup (Team)	sharepoint	

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
674	26 Nov 2013	Qatar Charity	Drawing	PDF	Shelter Drawing-Foundation & Roof Detail.pdf		Other	As requested	Foundation and roof detail	Arup (Team)	sharepoint	
675	26 Nov 2013	Qatar Charity	Drawing	PDF	Shelter Drawing-Front Elevation.pdf		Other	As requested	Front Elevvation	Arup (Team)	sharepoint	
676	26 Nov 2013	Qatar Charity	Drawing	PDF	Shelter Drawing-Plan View.pdf		Other	As requested	Plan of selter	Arup (Team)	sharepoint	
677	25 Nov 2013	ACTED	Drawing	PDF	B-1 ACTED loh kot shelter elevation.pdf		Other	As requested	Front elevation, strutural details of shelter for Batch-01	Arup (Team)	sharepoint	
678	25 Nov 2013	ACTED	Drawing	PDF	B-1 ACTED loh kot shelter Plan.pdf		Other	As requested	shelter plan, structural details of shelter for Batch-01	Arup (Team)	sharepoint	
679	25 Nov 2013	ACTED	Drawing	PDF	B-1 ACTED loh kot shelter side veiw.pdf		Other	As requested	side view, structural details of shelter for Batch-01	Arup (Team)	sharepoint	
680	25 Nov 2013	ACTED	Drawing	PDF	B-2 shelter changes in ridge beam.pdf		Other	As requested	BCJ shelter batch 01, BCJ shelter batch 02 (suggestion for beam)	Arup (Team)	sharepoint	
681	20 Nov 2013	CRS	Drawing	PDF	Elevation Rev D.PDF		Other	As requested	Resilience shelter design 2012. Shelter front Elevation revision D	Arup (Team)	sharepoint	
682	20 Nov 2013	CRS	Drawing	PDF	Plan Rev D.PDF		Other	As requested	Resilience shelter design 2012. ground plan revision D	Arup (Team)	sharepoint	
683	20 Nov 2013	CRS	Drawing	PDF	Section Rev D.PDF		Other	As requested	Resilience shelter design 2012. Short setion revision C (name of file says rev D)	Arup (Team)	sharepoint	
684	20 Nov 2013	CRS	Drawing	PDF	site plan Rev D.PDF		Other	As requested	Resilience shelter design 2012. Site plan revision D	Arup (Team)	sharepoint	
685	20 Nov 2013	CRS	Other	PDF	UPDATE - BOQ (09-Oct-13)- 1010 shelters.pdf		Other	As requested	Bill of quantities for one room shelter - updated 9 Oct 2013	Arup (Team)	sharepoint	
686	20 Nov 2013	CRS	Other	PDF	10.09.23.Sindh&Balochistan BoQ.ib.pdf		Other	As requested	Annexure of Purchase Order for 1000 Shelter kits for Flood Emergency Response 2010 for Sindh & Baluchistan	Arup (Team)	sharepoint	
687	20 Nov 2013	CRS	Drawing	PDF	10.09.20.2010 Floods B&S.sheet1.pdf		Other	As requested	site plan and pillar layout, shelter floor plan. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design	Arup (Team)	sharepoint	
688	20 Nov 2013	CRS	Drawing	PDF	10.09.20.2010 Floods B&S.sheet2.pdf		Other	As requested	short section, short elevation. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design	Arup (Team)	sharepoint	
689	20 Nov 2013	CRS	Drawing	PDF	10.09.20.2010 Floods B&S.sheet3.pdf		Other	As requested	Long elevation, roof plan. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design	Arup (Team)	sharepoint	
690	20 Nov 2013	CRS	Drawing	PDF	10.09.20.2010 Floods B&S.sheet4.pdf		Other	As requested	detail at eave, colum/ roof structure connections/ detail at column footer, wall sheathing attachment, and earth berm. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design	Arup (Team)	sharepoint	
691	20 Nov 2013	CRS	Drawing	PDF	10.09.29.S%2BB.Shelter%20IP.AnnexG.TS%20design%20S1.pdf		Other	As requested	site plan and pillar layout. shelter floor plan. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design - 2010	Arup (Team)	sharepoint	
692	20 Nov 2013	CRS	Drawing	PDF	10.09.29.S%2BB.Shelter%20IP.AnnexG.TS%20design%20S2.pdf		Other	As requested	short section, short elevation. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design - 2010	Arup (Team)	sharepoint	
693	20 Nov 2013	CRS	Drawing	PDF	10.09.29.S%2BB.Shelter%20IP.AnnexG.TS%20design%20S3.pdf		Other	As requested	Long elevation, roof plan. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design - 2010	Arup (Team)	sharepoint	
694	20 Nov 2013	CRS	Drawing	PDF	10.09.29.S%2BB.Shelter%20IP.AnnexG.TS%20design%20S4.pdf		Other	As requested	detail at eave, colum/ roof structure connections/ detail at column footer, wall sheathing attachment, and earth berm. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design - 2010	Arup (Team)	sharepoint	
695	20 Nov 2013	CRS	Other	PDF	10.09.29.S+B.Shelter IP.AnnexB.Mobilization Guidelines.pdf		Other	As requested	Transitional Shelter Program. Initial Community Mobilization Meeting Overview	Arup (Team)	sharepoint	
696	20 Nov 2013	CRS	Other	PDF	10.09.29.S+B.Shelter IP.AnnexD.ECSS guidelines.pdf		Other	As requested	Transitional Shelter Program Beneficiary Eligibility Criteria. Transitional Shelter and Sanitation Facility Site Selection Guidelines	Arup (Team)	sharepoint	
697	20 Nov 2013	CRS	Drawing	PDF	CRS Pakistan Flood Response 2010 RTE.pdf		Other	As requested	real time evaluation of CRS' flood response in Pakistan KPK and Baluchistan	Arup (Team)	sharepoint	
698	20 Nov 2013	CRS	Other	PDF	CRS transitional Shelter-BOQ.pdf		Other	As requested	CRS-Pakistan BOQ of Transitional shelter (for Naseerabad divions-2010-11)	Arup (Team)	sharepoint	
699	20 Nov 2013	CRS	Other	PDF	BOQ Shelter Latrine floods 2007.pdf		Other	As requested	BOQ Shelter, Latrine, Bathing space Floods 2007	Arup (Team)	sharepoint	
700	20 Nov 2013	CRS	Report	PDF	OFDA Flood Evaluation Report.pdf		Other	As requested	CRS FLOOD RESPONSE PROGRAM. TURBAT	Arup (Team)	sharepoint	
701	20 Nov 2013	CRS	Report	PDF	08.11.27 Balochistan ERP Implementation Process.pdf		Other	As requested	Shelter and Women's Sanitation Space Construction Implementation and Monitoring Processes Overview. CRS Balochistan Earthquake Response Program 2.11.2008	Arup (Team)	sharepoint	
702	20 Nov 2013	CRS	Drawing	PDF	shelter drawings.pdf		Other	As requested	site plan and pillar layout; elevations and sections; roof plan; roof sheet and cladding detail; pillar and cladding detail. CRS Pakistan Balochistan earthquake response program - Shelter design 29.11.2008	Arup (Team)	sharepoint	
703	20 Nov 2013	CRS	Drawing	PDF	Step-by-step shelter construction guide.pdf		Other	As requested	step-by -step shelter construction guide. CRS earthquake response program. 27.11.2008	Arup (Team)	sharepoint	
704	20 Nov 2013	CRS	Drawing	PDF	10.09.29.S+B.Shelter IP.AnnexG.TS design S1.pdf		Other	As requested	site plan and pillar layout; shelter floor plan. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototyp design. 20.09.2010	Arup (Team)	sharepoint	
705	20 Nov 2013	CRS	Drawing	PDF	10.09.29.S+B.Shelter IP.AnnexG.TS design S2.pdf		Other	As requested	short section and short elevation. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design. 20.09.2010	Arup (Team)	sharepoint	
706	20 Nov 2013	CRS	Drawing	PDF	10.09.29.S+B.Shelter IP.AnnexG.TS design S3.pdf		Other	As requested	long elevation and roof plan. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design. 20.09.2010	Arup (Team)	sharepoint	
707	20 Nov 2013	CRS	Drawing	PDF	10.09.29.S+B.Shelter IP.AnnexG.TS design S4.pdf		Other	As requested	shelter details. CRS Pakistan 2010 flood response: Sindh and Balochistan shelter prototype design. 20.09.2010	Arup (Team)	sharepoint	
708	20 Nov 2013	CRS	Other	PDF	BOQ 2010 Transitional shelter in Northern Sindh.pdf		Other	As requested	CRS CRS Pakistan - BOQ 2010 Transitional Shelter Northern Sindh	Arup (Team)	sharepoint	
709	20 Nov 2013	CRS	Report	PDF	Real Time Evaluation for 2010 Shelters in Northern Sindh.pdf		Other	As requested	Real Time Evaluation of CRS' Flood Response in Pakistan. Jacobabad and Kashmore, Sindh	Arup (Team)	sharepoint	
710	20 Nov 2013	CRS	Other	PDF	BOQ 2011 Landhi Shelters Southern Sindh.pdf		Other	As requested	Shelter BoQ for Sindh (Mirpur Khas)	Arup (Team)	sharepoint	
711	20 Nov 2013	CRS	Drawing	PDF	Drawing 2011 Landhi Shelters Southern Sindh.pdf		Other	As requested	SHELTER (Landhi) DRAWING (Sindh 2011). Plan, side elevation and front elevation	Arup (Team)	sharepoint	
712	20 Nov 2013	CRS	Other	PDF	BOQ 2012 Northern Sindh Shelters.pdf		Other	As requested	Project: Transitional Shelter Response for Flood-Affected Households in Sindh. BILL OF QUANTITIES FOR ONE ROOM SHELTER-UPDATED 09-Oct-13	Arup (Team)	sharepoint	
713	20 Nov 2013	CRS	Report	PDF	CRS Pakistan - RTE Report.pdf		Other	As requested	CRS Sukkur Office 2012 Flood Emergency Response – Shelter Real Time Evaluation (RTE) Report	Arup (Team)	sharepoint	
714	20 Nov 2013	CRS	Drawing	PDF	Elevation Rev D.pdf		Other	As requested	Shelter front elevation revision D. Resilient shelter design 2012	Arup (Team)	sharepoint	
715	20 Nov 2013	CRS	Drawing	PDF	Plan Rev D.pdf		Other	As requested	Ground plan revision D. Resilient shelter design 2012	Arup (Team)	sharepoint	
716	20 Nov 2013	CRS	Drawing	PDF	Section Rev D.pdf		Other	As requested	short section revision C (name of file says rev D). Resilient shelter design 2012	Arup (Team)	sharepoint	
717	20 Nov 2013	CRS	Drawing	PDF	site plan Rev D.pdf		Other	As requested	site plan revision D. Resilient shelter design 2012	Arup (Team)	sharepoint	
718	27 Dec 2013	HANDs	Excel File	Digital	BoQ_all.xls		Other	As requested	Bill of Quantity for one Room Shelter	Arup (Team)	sharepoint	
719	27 Dec 2013	HANDs	Drawing	PDF	CDF_Muzafragar.pdf		Other	As requested	ORS - Technical drawings and photos for Muzafragar	Arup (Team)	sharepoint	
720	27 Dec 2013	HANDs	Excel File	Digital	Copy of BOQ Chanwara.xls		Other	As requested	Bill of quantities for Chanwara	Arup (Team)	sharepoint	
721	27 Dec 2013	HANDs	Excel File	Digital	Copy of BOQ MI Shelter- Jacobabad.xls		Other	As requested	Bill of Quantities for Jacobabad	Arup (Team)	sharepoint	
722	27 Dec 2013	HANDs	Other	Digital	HANDS Shelters updates.pptx		Other	As requested	Presentation - Hands shelter updates	Arup (Team)	sharepoint	
723	27 Dec 2013	HANDs	Drawing	PDF	HANDS_ Jacobabad.pdf		Other	As requested	ORS - technical drawings and photos Jacobabad	Arup (Team)	sharepoint	
724	27 Dec 2013	HANDs	Drawing	PDF	IFC_Ryk.pdf		Other	As requested	ORS - technical drawings and photos RYK	Arup (Team)	sharepoint	
725	27 Dec 2013	HANDs	Word Doc	PDF	Medico International TAMEER Project BOQ-Matiari.docx		Other	As requested	Medico International Tameer - BoQs SUMMARY OF COST	Arup (Team)	sharepoint	
726	27 Dec 2013	HANDs	Drawing	PDF	SANGTANI_Rajanpur.pdf		Other	As requested	ORS technical drawings and photos SANGTANI, Rajanpur	Arup (Team)	sharepoint	
727	27 Dec 2013	HANDs	Drawing	PDF	TAMEER MI funded Jacobabd-BOQ.xlsx		Other	As requested	BoQ sHands Shelter Project Jacobabad - Tameer funded	Arup (Team)	sharepoint	
728	08 Dec 2013	CRS	Word Doc	Digital	Construct-Guideline-CRS-Shelter-2010-Sindh&Balochistan.doc		Other	As requested	Construction guidelines for Sindh&Balochistan	Arup (Team)	sharepoint	
729	08 Dec 2013	CRS	Other	Digital	PICS-CRS-Shelter-2010-Sindh&Balochistan.docx		Other	As requested	Photos of shelter - Sindh&Balochistan	Arup (Team)	sharepoint	
730	08 Dec 2013	CRS	Drawing	PDF	10.09.29.S+B.Shelter IP.AnnexG.TS design S1.pdf		Other	As requested	Drawings Sindh&Balochistan	Arup (Team)	sharepoint	
731	08 Dec 2013	CRS	Drawing	PDF	10.09.29.S+B.Shelter IP.AnnexG.TS design S2.pdf		Other	As requested	Drawings Sindh&Balochistan	Arup (Team)	sharepoint	
732	08 Dec 2013	CRS	Drawing	PDF	10.09.29.S+B.Shelter IP.AnnexG.TS design S3.pdf		Other	As requested	Drawings Sindh&Balochistan	Arup (Team)	sharepoint	
733	08 Dec 2013	CRS	Drawing	PDF	10.09.29.S+B.Shelter IP.AnnexG.TS design S4.pdf		Other	As requested	Drawings Sindh&Balochistan	Arup (Team)	sharepoint	
734	08 Dec 2013	CRS	Word Doc	Digital	Construct-Guideline-CRS-Shelter-2010-Sindh&Balochistan.doc		Other	As requested	Construct-Guideline Sindh&Balochistan	Arup (Team)	sharepoint	
735	08 Dec 2013	CRS	Word Doc	Digital	PICS-CRS-Shelter-2010-Sindh&Balochistan.docx		Other	As requested	Pictures Shelter-2010-Sindh&Balochistan	Arup (Team)	sharepoint	
736	08 Dec 2013	CRS	Other	Digital	PICS-CRS-Shelter-2011-Sindh-Mirpur Khas.docx		Other	As requested	Pictures shelter Sindh-Mirpur Khas	Arup (Team)	sharepoint	
737	08 Dec 2013	CRS	Other	Digital	12 11 30.Shelter IP.AnnexG.TS design S1.pdf		Other	As requested	Drawings and photos shelter Sindh-Mirpur Khas	Arup (Team)	sharepoint	
738	08 Dec 2013	CRS	Other	Digital	12 11 30.Shelter IP.AnnexG.TS design S2.pdf		Other	As requested	Drawings and photos shelter Sindh-Mirpur Khas	Arup (Team)	sharepoint	
739	08 Dec 2013	CRS	Other	Digital	12 11 30.Shelter IP.AnnexG.TS design S3.pdf		Other	As requested	Drawings and photos shelter Sindh-Mirpur Khas	Arup (Team)	sharepoint	
740	08 Dec 2013	CRS	Other	Digital	12 11 30.Shelter IP.AnnexG.TS design S4.pdf		Other	As requested	Drawings and photos shelter Sindh-Mirpur Khas	Arup (Team)	sharepoint	
741	08 Dec 2013	CRS	Other	Digital	Construct-Guideline-CRS-Shelter-2012-Sindh-Jacobabad.docx		Other	As requested	Construction guidelines Sindh-Jacobabad	Arup (Team)	sharepoint	
742	08 Dec 2013	CRS	Other	Digital	PICS-CRS-Shelter-2012-Sindh-Jacobabad.docx		Other	As requested	Photos shelter Sindh-Jacobabad	Arup (Team)	sharepoint	
743	08 Dec 2013	CRS	Other	Digital	12 11 30.Shelter IP.AnnexG.TS design S1.pdf		Other	As requested	Drawings and photos shelterSindh-Jacobabad	Arup (Team)	sharepoint	
744	08 Dec 2013	CRS	Other	Digital	12 11 30.Shelter IP.AnnexG.TS design S2.pdf		Other	As requested	Drawings and photos shelterSindh-Jacobabad	Arup (Team)	sharepoint	
745	08 Dec 2013	CRS	Other	Digital	12 11 30.Shelter IP.AnnexG.TS design S3.pdf		Other	As requested	Drawings and photos shelterSindh-Jacobabad	Arup (Team)	sharepoint	
746	08 Dec 2013	CRS	Other	Digital	12 11 30.Shelter IP.AnnexG.TS design S4.pdf		Other	As requested	Drawings and photos shelterSindh-Jacobabad	Arup (Team)	sharepoint	
747	08 Dec 2013	CRS	Excel File	Digital	DATABASE_3W+info_CRS.xlsx		Other	As requested	updated DATABASE_3W+info	Arup (Team)	sharepoint	

Arup Received No.	Date Received	Issued By (originator)	Media Type	Media Format	Document No. or Filename	Revision (if any)	Document Status	Document Purpose	Description or Title	Issued To	File # and Storage or Location	Accompanying Corresp. Ref # (if any)
748	08 Dec 2013	CRS	Excel File	Digital	Database4W_GIS_2010_11_12_CRS.xlsx		Other	As requested	updated database4W_GIS_2010_11_12	Arup (Team)	sharepoint	
749	09 Dec 2013	UNHCR	Other	Digital	BoQ HANDS UNHCR.pdf		Other	As requested	Bill of Quantities - partner Hands	Arup (Team)	sharepoint	
750	09 Dec 2013	UNHCR	Other	Digital	BoQ IFC UNHCR.pdf		Other	As requested	Bill of quantities - Punjab One room + kitchen	Arup (Team)	sharepoint	
751	09 Dec 2013	UNHCR	Other	Digital	DATABASE_3W+info_UNHCR.xlsx		Other	As requested	updated DATABASE_3W+info	Arup (Team)	sharepoint	
752	09 Dec 2013	UNHCR	Other	Digital	Database4W_GIS_2010_11_12_UNHCR.xlsx		Other	As requested	updated database4W_GIS_2010_11_12	Arup (Team)	sharepoint	
753	09 Dec 2013	UNHCR	Other	Digital	DRR DRM Approach UNHCR.pdf		Other	As requested	DDR approach in shelter	Arup (Team)	sharepoint	
754	09 Dec 2013	UNHCR	Other	Digital	Technical Specs HANDS UNHCR.pdf		Other	As requested	Technical specs - benefitiaries	Arup (Team)	sharepoint	
755	09 Dec 2013	UNHCR	Excel File	Digital	BoQ_all.xls		Other	As requested	BoQs for one room shelter	Arup (Team)	sharepoint	
756	09 Dec 2013	UNHCR	Drawing	Digital	CDF_Muzafragar.pdf		Other	As requested	drawings and photos shelter Muzafragar	Arup (Team)	sharepoint	
757	09 Dec 2013	UNHCR	Drawing	Digital	DATABASE_3W+info_UNHCR.xlsx		Other	As requested	updated DATABASE_3W+info	Arup (Team)	sharepoint	
758	09 Dec 2013	UNHCR	Drawing	Digital	Database4W_GIS_2010_11_12_UNHCR.xlsx		Other	As requested	updated database4W_GIS_2010_11_12	Arup (Team)	sharepoint	
759	09 Dec 2013	UNHCR	Drawing	Digital	HANDS_ Jacobabad.pdf		Other	As requested	drawings and photos shelter partner Hands	Arup (Team)	sharepoint	
760	09 Dec 2013	UNHCR	Drawing	Digital	IFC_Ryk.pdf		Other	As requested	drawings and photos Ryc	Arup (Team)	sharepoint	
761	09 Dec 2013	UNHCR	Drawing	Digital	SANGTANI_Rajanpur.pdf		Other	As requested	drawings and photos Rajanpur	Arup (Team)	sharepoint	
762	09 Dec 2013	CONCERN	Excel File	Digital	DATABASE_3W+info_CONCERN.xlsx		Other	As requested	dated database4W_GIS_2010_11_12 AND 3w + INF	Arup (Team)	sharepoint	
763	11 Dec 2013	IOM	Excel File	Digital	24052012_IOM_ORS_HERWG.XLSX		Other	As requested	IOM's 2010 3W database	Arup (Team)	sharepoint	
764	11 Dec 2013	IOM	Other	Digital	Manuel's reply and comments.pdf		Other	As requested	Reply to questions and comments from IOM	Arup (Team)	sharepoint	
765	11 Dec 2013	ACTED	Excel File	Digital	DATABASE_3W+info_ACTED.xlsx		Other	As requested	updated DATABASE_3W+info	Arup (Team)	sharepoint	
766	12 Dec 2013	HANDs	Excel File	Digital	Copy of DATABASE_3W+info_HANDS.xlsx		Other	As requested	updated DATABASE_3W+info	Arup (Team)	sharepoint	
767	12 Dec 2013	HANDs	Excel File	Digital	py of Database4W_GIS_2010_11_12_HANDS.xlsx		Other	As requested	updated database4W_GIS_2010_11_12	Arup (Team)	sharepoint	