

DLP Dhuvaafaaru.

1. Pre-Defects Liability Period

On 3 and 4 December 2008, the IFRC carried out a lottery to allocate 600 houses to 426 families. On 8 December 2008 the GoM started the relocation of these 426 families; this was finalized 2 weeks later. On the days of the relocation, the house owners received their house key upon arrival in Dhuvaafaaru. In the time between the lottery and the relocation, the recovery team of IFRC handed out to each family a "House Maintenance Manual". This manual contained valuable information on how to undertake the maintenance of the new received house.

In October 2008, all houses and public buildings were inspected by the consultant (Cardno) prior to the hand over. On 8 December 2008, a defect list containing quite some defects was still in circulation. The contractor, Lian Beng Amin Ltd., (LBA) was supposed to finalize this defects list before the actual hand over but never achieved to do so. Upon Cardno's departure, LBA promised to handle the listed defects as complaints after the resettlement. But with limited manpower and unavailability of door locks, flush tank mechanism, doors and other spare parts and a tight timeframe only temporary solutions were put in place. NDMC and IFRC should never have approved the handover of the houses before all listed defects were rectified. But a different decision was taken and on 8 December the first families moved into their new homes.

2. Defects Liability Period undertaken by NDMC

At the start of the Defects Liability Period (8 December 2008), IFRC was not involved in the rectification process as this was the contractual responsibility of NDMC. At that time NDMC had a site coordinator and project engineer in country to handle the defects rectification on Dhuvaafaaru. To assist the NDMC site coordinator in following up the defects, the IFRC recovery team had attached a defects checklist to the "House Maintenance Manual". As experience teaches us that new houses always have some malfunction items or defects, in this case they had several as the defects before hand over were not yet rectified. The house owners were instructed to undertake an examination of the house and tick the checklist accordingly, immediately after moving in. A box was placed in the Island Office to collect these checklists and the NDMC site coordinator was supposed to empty the box daily. According to the proposed idea, the NDMC site coordinator should have made a rectification plan which LBA had to follow strictly.

From the beginning the system did not work as expected due to several reasons:

- the project engineer did not install the rectification system as it was intended;
- the site coordinator did not have enough authority to manage the contractor;
- the community did not follow the system as they were instructed by the IFRC recovery team as nobody from NDMC was maintaining this system;
- the contractor did not always follow the instruction given by the site coordinator.

In fact, the people just walked into the office of the site coordinator and gave their complaints verbally; the site coordinator recorded these complaints and informed the contractor. At least in this case the defects got registered and the site coordinator kept track of reported defects. But by using this system the community had no proof in hand that they ever filed a complaint. During the period between 21 and 28 December more than 600 complaints were received from 318 houses regarding urgent matters. Despite the assurance from the contractor that these problems would be rectified

immediately the site coordinator discovered that these complaints were not dealt with properly or not dealt with all, this resulted in the fact that house owners complained repeatedly.

It became even more complicated, when people gave their complaints directly to LBA, who would not note this down but sent a worker for immediate rectification or forgot about it. From December 2008 until July 2009 this rectification process moved on. While, with a high-quality rectification system three months should have been enough to rectify all immediate detected defects. In this way the contractor could have left Dhuvaafaaru in the beginning of March and people would have started to do small maintenance jobs by themselves. With the contractor on site they did not bother to do anything by themselves, they just informed the contractor and things would be taken care of even if it was not a defect. The contractor was also not properly managed by this head office and took no initiative to speed up this rectification process.

The site coordinator was issuing three monthly progress reports to NDMC. From these reports we learnt that in the first three months after the relocation the site coordinator received 28 complaints per day. After February the complaints rate reduced to 7 - 12 per day and maintained consistently. Only after periods with heavy rains the rate increased again to 25 - 30 complaints per day. The main problems were with dysfunctional door locks, bad quality of doors, wall cracks and during the raining month of April, leaking roofs. Most of the defects were attended to within 24 hours, only during March and April the contractor did not respond accordingly to the site coordinator's satisfaction.

The leaking roofs became a huge issue. The roof leaks were reported mostly due to water seepage through screwed points. The remedial measure the contractor persisted on was the application of silicone waterproofing substrate, which antagonized the community. Concerned about the remediation of roof leaks by using silicone waterproofing substrate this was questioned by the site coordinator and advice from NDMC Project Management was requested but never received.

On 11 February 2009 the site coordinator carried out an inspection of the public buildings and most of the detected defects got rectified according to the contractor's pace. But one of the main concerns regarding the public buildings was the water infiltration through the ventilation above the windows. All rooms on the second and third floor of these public buildings are subject to a high level of water penetration through the ventilation; at that level the extent of water penetration is much higher due to high altitude with high winds. The site coordinator seeks help from the NDMC Project Management to come up with a solution but never received it.

In May 2009, the site coordinator complains about LBA who seem not to respect verbally made agreements and decided to document an email based communication with the contractor. This should have been done from the start, by using the prepared checklist the contractor would only have been informed in writing and no information or agreements could have gone lost.

3. Issuing Notices to the Contractor by NDMC

In May 2009 the NDMC project manager issues the first Notice to the contractor. In this notice she expresses two concerns: one about the quality of the replaced door locks and a second on the quality of the external doors.

"In accordance with Clause 7.5 of the General Conditions of Contract, she instructed LBA to replace all the door locks used within the housing contract as the existing door locks used were not in accordance with the Contract. She instructs LBA to finalize the work the latest on 12 July 2009. If the work would not be finalized on time it will be interpreted that the Contractor is unwilling or unable to complete the works and as entitled under Clause 7.5 of the General Conditions of Contract, other persons will be employed to carry out the work using moneys deducted from the Retentions.

The external doors constructed on the housing contract are hollow-core and do not comply with the specifications of the contract. In particular they do not meet the requirements of Section 8.1.5 of the Specification in that they are not:

- *strong and resistant to wind pressure and other forces applied in use;*
- *resistant to water, and nor do they have a;*
- *sound arresting affect to noise from outside as well as inside.*

In December 2008, LBA promised that they would replace all the external doors to the houses. This has not yet eventuated and NDMC was not aware of a single external door that had been replaced. Therefore, the same instructions as given for the locks were applicable for the doors.”

No action was taken by LBA and in June 2009 a second Notice to the contractor was issued, repeating the above mentioned instructions but revising the rectification dates to the end of October 2009. On 5 July 2009 the NDMC project manager agreed on the door sample issued by LBA and the door construction could start. But this never happened and the reason for this was never revealed.

No instructions were given by NDMC Project Management on fixing roofs or wall cracks, all the energy was focussed on the door locks and external doors. Meanwhile, this rectification process moved on without really taking care of important rectification issues. As nobody of NDMC Project Management took the responsibility of instructing the contractor of how exactly defects should be rectified. The contractor kept on cruising around the site fixing some minor defects verbally reported by the house owners.

At the same time we were informed that the contract of the NDMC project manager would finish the second week of August and the site coordinators' by the end of September. With no replacements coming in to take on the site management for NDMC, urgent measures needed to be taken to secure the Defects Liability Period rectifications in Dhuvaafaaru. At that time it was unclear if any of the engineers would return under new contracts.

But the most disturbing part was when the NDMC project manager said that beside a quick check on the external doors and door locks of the houses no inspection would be undertaken before the handover of the 600 houses. Also for the public buildings no final check-up would be done. This working method was unacceptable for IFRC and immediate action needed to be taken.

4. DLP rectification undertaken by DLP team

In the beginning of July 2009 the IFRC Defects Liability Period (DLP) team was complete and ready to undertake the rectification of defects for several projects initiated by IFRC and BRCS. The DLP team offered their services to the NDMC project manager to help with the final check-up of all projects on Dhuvaafaaru as final completion certificates could not be issued unless the complete projects was checked. The NDMC project manager still thought that it was not necessary to undertake this check-up but gave us the authority to check all projects as we kept on insisting.

In the mean time we needed to secure our position for the time that no project manager would be present at NDMC. Therefore, we agreed on the following:

- GOM was asked to formally inform the contractor (Lian Beng, Singapore) that IFRC was going to act on their behalf as their “agent”;
- the DLP team could issue instructions to the contractor without taking on any of the liability as the GOM retained all contractual obligations;

- the DLP team was acting as their project manager but all signing authority remained with the GOM in terms of contract matters;
- IFRC was able to use all items available under the contract to ensure the defects were completed correctly – either by the contractor or enforcing the possible solution of using another contractor and reimbursing them with the retention fees held.

Once all contractors were informed concerning the above, the DLP team could start working on site. The table below illustrates the end date of the DLP for each individual project; these dates were taken in account while developing the check-up time schedule.

No	Contract	Contractor	End of DLP
1	Public buildings	Lian Beng Amin Ltd	30 August 2009
	<i>Administration building</i>		
	<i>Pre-School</i>		
	<i>Primary School</i>		
	<i>Secondary School</i>		
2	Waste Water System	Lian Beng Amin Ltd	17 August 2009
3	562 houses	Lian Beng Amin Ltd	7 December 2009
4	Power Station construction	LF Construction	10 September 2009
5	Sports Facility	LF Construction	24 May 2010
6	Electrification Network	Power Engineering	15 November 2009
7	Street Lighting	Power Engineering	20 January 2010

All contracts were monitored through NDMC except the Waste Water System, for this project IFRC had a direct contract with the LBA.

The table below shows the amount of withheld and reimbursed retention monies per project and the date on which the Final Completion Certificate was issued. Attached to this a more thorough explanation per project is given.

No	Contract	Withheld retention USD	Value of work done variation	Deduction USD	Reimbursed retention USD	Date Final Completion Certificate
1	Public buildings	117,450.00	5,040.00	11,686.90	110,803.10	17 December 2009
2	Waste Water System	124,239.71		100.00	124,139.71	3 December 2009
3	562 houses	435,000.00		0.00	435,000.00	20 January 2010
4	Power Station construction	9,044.18		0.00	9,044.18	11 January 2010
5	Sports Facility	8,341.45		0.00	8,341.45	
6	Electrification Network					
	Equipment	34,887.47		0.00	34,887.47	28 February 2010
	Network	9,568.88		0.00	9,568.88	28 February 2010
7	Street Lighting	0.00		0.00	0.00	28 February 2010

4.1. Public buildings, Waste Water System, Power Station

On 21 July 2009 the final check-up of the public buildings, waste water system and power station construction took place. The electrification network was checked by the NDMC site coordinator and followed closely by the NDMC project manager. A DLP checklist was developed by the DLP team and handed over to the contractor, with explanations on how to fix each defect.

4.1.1. Public Buildings

The main defects for the public buildings were:

- door locks;
- decolourization of tiles in toilets and bathrooms;
- missing silicones around commodes;
- bad quality of light fixture;
- big gaps under doors;
- lose window frames;
- wind and rain blows under window frames;
- wind and rain blows through ventilation holes above windows.

Two of the above mentioned points were not taken care of by LBA. The fact that the rain comes through the ventilation holes above the windows is not a construction mistake but a design mistake. This type of buildings is used throughout the Maldives, constructed similar. But in this case these buildings are not protected by for example trees and the wind blows the high rain horizontal through these ventilation holes. Currently, the only solution is to cover these holes but this has to be financed by the GoM and not by LBA as this is not a defect.

The problem with the decolourization of the tiles can only be solved by replacing all the tiles. There are several reasons why these tiles are decolourized; poor quality of tiles, incorrect use of grout, poor waterproofing and poor preparation of base. The DLP team decided to deduct 25% of the total installation cost for tiles and withheld it from LBA's retention monies. The total amount for hold backs for the tiles in public buildings was **11,686.90 USD**.

To divide this balance between the three schools a MoU was signed with each school separate. The balance should be used for further maintenance of the school building. The Ministry of Education is responsible for the following up of the correct use of the money.

4.1.2 Waste Water System

As mentioned above, this was the only project which was directly managed by IFRC. During the DLP period no defects were observed and the system was working perfectly. Nonetheless, the system was subject to a last investigation by the DLP team. During this examination no defects were detected. There were some problems with hours run meters, therefore, LBA was asked to provide 7 meters, one for each pump station, for future replacements. In the beginning of November LBA handed over 10 run hours' meters to the DLP team. During the defects correction period in June 2008 there were two holdbacks on the final claim:

- 100 USD for fixing the rusting control panel in pump station 1;
- 500 USD for installing a bowser connection at the outfall station.

Primer and paint were purchased from the holdback of 100 USD and together with the run hours' meters handed over to the sewer operators. The amount of paint should be enough to repaint all pump stations. The 500 USD for the bowser connection was not withheld as this item was not an initial part of the tender and not added to the tender as a variation. Hence, there was no legal ground to deduct this amount from the withheld retention money. The total amount for hold backs for the Waste Water System was **100.00 USD**.

4.1.3 Construction of power station

No major defects were detected during the check up of the construction of the power house. The few minor issues were mentioned in the final check list and handed over to the contractor, LF Construction. On 9 September 2009 LF Construction got informed a second time as not all defects were fixed by that date. On 29 October 2009 all defects were rectified and a letter was issued to GoM with the statement that a final completion certificate could be issued and that the retention money could be reimbursed without any deductions. The reason for the late return of the retention money was the fact that it took NDMC 2 months to get this final completion certificate organized and signed by the correct parties. The complete amount of the withheld retention money could be released after the signed completion certificate was received.

4.1.4 Electrification Network

The work conducted by Power Engineering on the electrification network and powerhouse installation was closely followed by the NDMC project engineer and site coordinator. In June 2009 most of the defects were rectified, the delivery of 3 new radiators was still pending. In October 2009 we did not receive any news from Power Engineering, hence, a checklist with some additional detected defects was sent to them with the urgent request to finalize all defects before 1 November 2009. On 5 November 2009 all defects were rectified but the delivery of the radiators was still pending. It took until February 2010 before the electrical engineer of NDMC visited Dhuvaafaaru to do a final check-up of the entire network and installation. The final completion certificate was released soon after by NDMC. The complete amount of the withheld retention money could be released after the signed completion certificate was received.

4.1.5 Sports Facility

On 4 May 2010 the final defects check up took place. The contractor, LF Construction, was requested to replace two external doors, no other defects were detected. The retention money was released immediately after the work was carried out.

4.2 Construction of Houses

To be able to check 600 houses (562 funded by IFRC and 38 by GOM) within a pre-set timeframe and to give LBA enough time to rectify all defects before the end of the DLP a system needed to be put in place. Therefore, it was decided to divide the 600 houses into 6 batches of 100 houses. The inspection of the first batch of 100 houses took place at the end of August. Every 14 days a new batch would be checked, defects requiring rectification noted and the Instructions to the Contractor – Defects Liability Period (ITC-DLP) notice with the batched Defects Reporting (DR) forms delivered to LBA on-site and LBA Singapore by email transfer. This system made it possible for all 600 houses to be rectified by the end of the DLP.

The table below shows the dates that the defect rectification team planned to check each batch of 100 houses and the date by which all defects of that batch should be rectified. LBA's team on Dhuvaafaru needed to focus every 14 days on that specific batch of 100 houses and was only allowed to move to the next batch for rectification works after gaining approval from the DLP team.

Block Number	Batch Number	Check-up date	Hand over forms	Start date Rectification	End date Rectification	Amount of houses
1 – 13	Batch 1	25/08/09	31/08/09	01/09/09	30/09/09	103
14 – 24	Batch 2	7/09/09	15/09/09	16/09/09	30/09/09	99
25 – 35	Batch 3	28/09/09	30/09/09	01/10/09	15/10/09	103
37 – 46, 48, 54	Batch 4	12/10/09	15/10/09	16/10/09	31/10/09	99
47,49,50,53,55 – 58, 61,62	Batch 5	26/10/09	31/10/09	01/11/09	15/11/09	105
63- 66, 69 - 74	Batch 6	9/11/09	15/11/09	16/11/09	30/11/09	91

Additionally, it was very important to stress that the defects which got directly reported to the NDMC site coordinators' office or the LBA site office on Dhuvaafaru by the individual householders would not be taken in account or acted upon, unless the complaint was a matter of urgency. The community was informed on this. This allowed LBA to concentrate on the particular batch of houses undergoing rectification works at that time.

When the DLP team handed over the new batch of DR reporting forms they would also inspect the rectification work completed on the previous batch of houses. If the works would have been completed satisfactorily then the works would be signed off and the DLP for those houses would end as described below. However, if the work had been not completed satisfactorily then discussions would be held between the DLP team and LBA as to how the work could be completed as required. This procedure would take place every 14 days except for the first batch, as it was acknowledged even at an advanced stage of the DLP; LBA needed some time to get organized.

The individual housing DR reporting forms needed to be signed by a LBA representative after all defects were rectified. LBA must ask the house owner to sign for each defect after rectification as not all defects were rectified at the same time. During the final check up the DLP team asked the owner to sign at the bottom of the DR reporting form for total approval. Once the document was signed the DLP for that house had come to an end.

To assist LBA with the rectification works the DLP team attached to each batch of houses "Instructions to the Contractor – Defects Liability Period" (ITC-DLP) document. This document contained thorough information on how to rectify the defects correctly, the amount of door locks and doors to replace per batch, pictures of faulty construction work and points of discussion on which the DLP team agreed or disagreed. But the main purpose was to keep LBA at all times informed on the correct rectification procedure. During the total rectification process 6 ITC-DLP's were issued to LBA.

The main defects detected were:

- internal flush tank mechanism be (partially) replaced;
- leaking roofs through the screw points and between the ridge/side plates and the roofing sheets;
- incorrect usage of screws to tighten roofing sheets (reason of leaking);
- rusted roofing sheets;
- several wall cracks per house, visible in common places for all houses;
- window locks to be replaced;
- door locks to be replaced;
- poor condition of external doors;
- missing downpipes above well in certain housing types;
- missing waterproofing cement layer on wall top.

Immediately after the check-up of the first batch it was noticeable that the amount of defects for the 600 houses would be astonishing. Hence, the timetable as mentioned above would not work out as LBA would never be able to finish the defects of 100 houses in two weeks. Additionally, the system of checking up the previous batch before the next batch would be issued was also not working out for the same reason. Therefore, a different time schedule needed to be developed. Where, batches could be handed out earlier to give the contractor more time to get organized. The DLP team did several random check-ups during the rectification period to make sure that LBA continued the rectification as instructed through the ITC-DLP. The decision was taken to postpone the final re-check of all 600 houses till after the end of the DLP period to give LBA more time to rectify all defects as instructed.

Block Number	Batch Number	Check-up date	Hand over forms	Start date Rectification	End date Rectification	Amount of houses
1 – 13	Batch 1	25/08/09	31/08/09	01/09/09	12/12/09	103
14 – 24	Batch 2	07/09/09	15/09/09	16/09/09	13/12/09	99
25 – 35	Batch 3	08/09/09	06/10/09	07/10/09	14/12/09	103
37 – 46, 48, 54	Batch 4	04/10/09	22/10/09	23/10/09	15/12/09	99
47,49,50,53,55 – 58, 61,62	Batch 5	05/10/09	25/10/09	26/10/09	16/12/09	105
63- 66, 69 - 74	Batch 6	18/10/09	28/10/09	29/10/09	17/12/09	91

The decision taken by the NDMC project manager to replace all external **doors and all door locks** was revised for several reasons.

- This decision was taken without any prior visit to the houses; the DLP team visited each house and checked each external door, based on a visual inspection by an engineer or architect the decision was taken to replace or to rectify the door. The amount of doors to replace was 926 this is 44.8% of the total amount of external doors.

The initial installed doors did not have a hollow-core as declared by the NDMC project manager in the Notice to the contractor. The door core was a wooden frame constructed with glued together timber pieces of 100 x 7 x 1.5 cm and covered by plywood. These doors were agreed on by Cardno at the time of delivery during construction. Additionally, the tender does not mention the use of full wooden doors. Therefore, it is legally not possible to instruct the contractor to change all doors into full wooden doors. The problem with the installed doors was the poor quality of the plywood and the glued timber pieces. But not all doors seemed to be constructed in the same way; hence the visual inspection determined the door replacement. The quality of the doorframe was improved by using bigger timber pieces of harder wood, by using damp proof plywood from Malaysia and by adding a clashing strip on 4 sides of the door.

- The decision to replace all the locks was based on the fact that from the handover of the houses lost of complaints concerning door locks were received by NDMC site coordinator. However between December 2008 and the time the first Notice to the Contractor was issued by NDMC project manager, in June 2009, a huge amount of locks were already replaced and these replaced locks did not cause problems anymore. Therefore, the DLP team checked all

locks in each house and decided to replace 290 additional locks this is 5.7% of the total amount of locks.

LBA agreed with the proposal of the DLP team and started in September with the production of external doors. It would take them till the second week of December before all external doors would be replaced.

The leaking **roof** issue was never looked into by the NDMC project manager, the contractor was allowed to fix the leaking screw points with silicone. No rectification method was introduced. The DLP team found out that 40% of the roofs were leaking and decided that serious measures needed to be taken. On 16 September 2009, the DLP team issued an ITC-DLP No 3 to LBA with a thorough explanation on how to fix the roofs. On 5 October 2009, after a random check of houses out of batch 1 and 2, we issued ITC-DLP No 4 where we inform LBA that the current methods for fixing roofs was not acceptable and instruct them again to replace all default screws. On 11 October 2009, ITC-DLP No 5 was issued to stress the importance of following the instruction given on roof rectification. No complying with the instruction given by the DLP team the repair costs for the roofs would be deducted from the withheld retention money. During the third week of October a site meeting was held with LBA's project manager from Singapore, Mr Sonny. This visit convinced Mr Sonny to look for an urgent decision concerning the rectification of roofs. With 40% of the roof currently leaking and the knowledge that an unknown percentage of roofs were bolted with the incorrect screws, something had to be done. If LBA would only repair the leaks the owners of the houses with default screws on their roofs would protest. Replacing all screws of all 600 houses was not an option as LBA would never be able to rectify all defects before 7 December 2009.

In agreement with Minister of State for Housing, Transport and environment, Mr Shahid, the DLP team proposed LBA to provide all needed materials to the households and instruct them on how to repair the roof of their own house. This was accepted by Mr Sonny; instead of fixing 40% of the roofs LBA provided materials to fix the roofs of all 600 houses at a cost of 100 USD per house. This included:

- wire brush and sand paper;
- approximately 826 screws per house [depending on the housing type]
- 5 meters of ridge foam;
- primer, zinc phosphate modified anticorrosive primer, roof paint

The above mentioned materials arrived after the finalization of the DLP. During the third week of December the DLP team together with a few volunteers went to Dhuvaafaaru to carry out the handover of the above mentioned roof materials. In the weeks prior to his handover the DLP team informed the community on exactly how and when this distribution would take place. Several letters were sent to the Island Office requesting to inform the community. The day before the distribution the DLP team organized a meeting per group (the community was split in 6 groups, each group came to the distribution point at different dates and times) to explain the distribution system one last time and to handover the rectification instructions. For 556 houses out of 600 the materials were picked up. The balance of the materials was handed over to the Island Office with the instruction on what and how to distribute. Currently, only a few people fixed their roof however they have all the required materials if needed.

The DLP team looked into the problem of the **wall cracks**. None of these cracks were structural, they were plaster cracks. Therefore, the decision was take that all plaster cracks should be filled as the rain water penetrates through these cracks and damps the inside wall. This could influence the

condition of the wall in the future and made it less stable as the bricks would disintegrate eventually. A methodical explanation on how to fix these cracks was given in several ITC-DLP's to the contractor.

All other defects were easy to fix and were rectified by the contractor without further delays.

5 Final completion of Dhuvaafaaru project

On 13 December 2009 the DLP team with the assistance of a few volunteers rechecked all 600 houses. During one week (6??) teams of two volunteers visited each house by using the Defects Reporting (DR) forms. These forms were used by the DLP team to detect the defects and handed over to LBA during the rectification period. All rectified defects were signed off for on this DR form by LBA. During this recheck it was the task of the teams to confirm that the defects were fixed and asked the house owner to sign off on it. This signed document would mark the end of the DLP for this specific house. Out of 600 houses the DR form was signed off for 436 houses. In 77 houses nobody was home during the check up. However, the community was informed several weeks in advance and the check up team visited more than ones during this week each unoccupied house. For 24 houses no defects were listed during the detection of defects period. LBA was asked to fix defects in 41 houses. For 63 houses the house owner refused to sign this due to several reasons:

- he was not satisfied with the rectification work
- he did not yet received the roof materials (distribution took place third week of December 2009)
- his wife was not entitled to sign any documents without his presence

The final completion date of each part of the project is mentioned in the table on page 4 of this document. All final completion certificates are issued and the retention monies released accordingly.

The contractor demobilized from the island on 17 January 2010. This was not an easy process as the community tried to stop LBA several times during this process. The community demanded that some of the heavy machinery would be handed over to them but they had not funded reason to do so. After an intervention from NDMC the problem could be solved. Additionally LBA agreed with the Island office on leaving some of the smaller equipment and the containers used for their accommodation behind.

6 Lessons learnt

The obligatorily cooperation with GoM was not always constructive for the work progress during the DLP. The engineer from NDMC had no experience with DLP and if it would have been up to her no thorough check ups would have been taken place. If the DLP team would not have taken over from GoM most of the critical defects would not have been fixed. As she was only focussing on the replacement of all doors which was not necessary in the first place. The main concern of the community was the problem with the leaking roofs which has been solved in an owner driven way.

Working through the GoM does not always stand for high quality especially when the donor cannot have a direct impact on the construction on site.

The handing over of the houses took place before most of the defects were rectified. In normal conditions there will always be defects after people move into their new houses. However, only minor defects can be allowed at the time of the handover. In this case too many defects still needed to be fixed after the move. Additionally, the GoM did not have a defects rectification system in place at the time of the hand over, in December 2008. The system introduced by IFRC was completely neglected by the engineer from GoM. As explained above, LBA was running around on the site fixing

defects informed by phone. There was no tracking system or even a systematic following up of defects. Small issues like broken flush tank mechanisms got an immediate intervention while leaking roofs were not attended. Due to this lack of organization the contractor was on site during the whole period of the DLP. Due to this, the house owners did not take any initiative to take the ownership of their house; they called the LBA for every little issue.

Only in August 2009, when the DLP team took over a rectification system was put in place. At this time, 9 months after the move, the community was used to call LBA for every little issue. Hence, it was an almost impossible task to introduce them to the new system and made them follow it.

Even before the hand over the community should be informed on the DLP system and the contractor should be instructed to follow this system strictly.

The handover of houses should only take place after most of the defects are rectified. In this case the house owner will take ownership of the house much earlier as there will be no need of contacting the contractor for minor defects. He will start rectifying defects himself and the contractor will be able to leave the site much sooner after the handover. Later detected severe defects will be rectified by the contractor at the end of the DLP.