ICCCAD
International Centre for Climate Change and Development

Shushilan Ltd.

Project Completion Report
on
Towards Trajectories of Inclusion: Making Infrastructure Work for the most Marginalized
Project Duration: 1st January to 30th April 2023

Submitted to
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Executive Summary

The Rainwater Harvesting System (RHS) project, implemented by Shushilan Ltd. in collaboration with the International Centre for Climate Change and Development (ICCCAD), aimed to address water scarcity issues in the informal settlement area of Mongla Signal Tower Colony. The project spanned from January to April 2023 and focused on community engagement, quality standards, and compliance with regulations. To initiate the project, a comprehensive site visit was conducted in January 2023 to identify the most suitable location for the RHS construction. The visit involved key stakeholders such as Shushilan Ltd., ICCCAD representatives, and community members. The Photovoice workshop organized by ICCCAD provided valuable insights into the water-related challenges faced by the residents, emphasizing the urgency of the project. Extensive community consultations were carried out through Focus Group Discussions (FGDs) and meetings with the mayor, councilor, and local community members. These consultations provided crucial inputs on the social, economic, and environmental aspects of the project, ensuring a holistic understanding of the community's needs.

Administrative clearance and land acquisition were essential steps in securing the project site, which involved meetings and negotiations with the Mayor of Mongla Port Municipality. An experienced engineer assessed the proposed construction site, considering various factors such as terrain, elevation, existing infrastructure, and water sources. The construction of the RHS at Signal Colony Tower was inaugurated on March 15, 2023, with the presence of local political figures, community members, and representatives from Shushilan Ltd. The project aimed to benefit 20 households initially, but during the inauguration, the community expressed a desire to share water with 50 additional families facing water scarcity.

To ensure quality standards, a community-based construction monitoring committee was established. This committee closely monitored the construction process, ensuring compliance and maintaining the desired quality. Furthermore, repair work was conducted to improve the water collection point at the Word Counselor's house, enhancing the hygienic conditions in the community. In parallel to the RHS project, a workshop on housing intervention was organized in the Korail informal settlement area in Dhaka, focusing on improving housing conditions. The workshop aimed to engage with the community and address their specific needs and challenges.
The project prioritized sustainability by establishing a water distribution committee, charging a minimal fee from beneficiaries for water usage. The funds collected were deposited into a dedicated bank account, serving as a savings fund for future repairs and maintenance of the RHS system.

Overall, the Rainwater Harvesting System project successfully addressed water scarcity in the Mongla Signal Tower Colony. Through collaborative efforts, community engagement, and adherence to quality standards, Shushilan Ltd. and ICCCAD effectively implemented a sustainable solution to mitigate the water crisis. This project serves as a model for similar initiatives, emphasizing the importance of community participation, stakeholder engagement, and long-term maintenance strategies for sustainable development.

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Chapter 1: Introduction

A. Background

The International Centre for Climate Change and Development (ICCCAD) is currently implementing a rainwater harvesting project in Mongla, Bangladesh and housing in korail. The project aims to increase access to clean water for the local community and reduce their dependence on climate-sensitive sources such as rivers, ponds and canals. The project involves the installation of rainwater harvesting systems, which capture, store and filter rainwater for immediate use or for storage. This system is expected to provide of water during dry season. The project is also expected to reduce the need for long-distance water transportation.
Rainwater harvesting systems in informal settlement area of Bangladesh can serve as an important source of water for both drinking and other domestic uses. Rainwater harvesting systems can be constructed in informal settlement area using simple, low-cost technologies such as ferro cement tanks, plastic tanks, and drum tanks. These systems can help reduce the need to rely on contaminated water sources, and also allow for better water management and conservation. Additionally, they can be used to provide supplemental irrigation during dry months, reducing the need to depend on groundwater sources. Rainwater harvesting systems can be designed to capture and store water from roofs, streets and other hard surfaces, such as in the construction of rooftop rainwater harvesting systems. The water can then be stored, treated, and used for various purposes such as drinking, washing, and other domestic uses. The water can also be used for small-scale irrigation, providing an additional source of income for informal settlement area residents. In order to ensure the successful implementation of a rainwater harvesting system in an informal settlement area, it is important to engage with local stakeholders and ensure that the system is culturally and socially accepted.

Salinity is also a major problem in the coastal area of Mongla, Bangladesh. The area is facing rapid sea level rise, which is leading to an increase in the salinity of the soil, water and air. This is having a negative impact on agriculture, aquaculture and other activities in the area. The main causes of salinity include the intrusion of seawater into freshwater sources, changing precipitation patterns, and the over-extraction of groundwater. To address the salinity problem, local authorities have taken several steps. These include the construction of embankments and the installation of tube-wells to extract freshwater from deep underground. Additionally, the government and non govt. organization is promoting rainwater harvesting, water conservation and aquaculture as alternatives to traditional agricultural practices.

Korail, an informal settlement area in Bangladesh, faces a significant housing problem. The population in Korail has grown significantly over the years, leading to an acute shortage of housing. This shortage has led to the development of overcrowded and unsafe housing conditions, depriving the residents of basic rights such as access to clean water, sanitation, and electricity. The living conditions in Korail have a significant impact on the health and wellbeing of its inhabitants, particularly vulnerable groups such as women and children. The inadequate housing conditions also have economic consequences, limiting opportunities for income generation and hindering

economic growth. Given the severity of the housing problem in Korail, it is essential to provide better housing for its residents. Providing better housing would require a collaborative effort among stakeholders, policymakers, and organizations to identify and implement sustainable solutions. It is critical to prioritize the needs of the most vulnerable populations in any interventions, particularly women and children. The provision of adequate housing in Korail would not only improve the living conditions of its residents but also have positive economic and social outcomes for the broader community.

Furthermore, the housing problem in Korail has far-reaching consequences on the health, wellbeing, and economic opportunities of its residents. The current situation demands urgent attention and action from policymakers, stakeholders, and organizations to find sustainable solutions that prioritize the needs of the most vulnerable populations. The rainwater harvesting project in Mongla provides an example of a potential solution that can increase access to clean water while reducing dependence on climate-sensitive sources. It is hoped that similar efforts can be undertaken in Korail to address the housing problem and improve the lives of its inhabitants.

B. Objectives of the Assignment

The major objective of Shushilan's activities in supporting the project are as follow

- Ensuring the participation and decision-making of local governments and urban residents in design, planning, implementation and monitoring of adaptation and climate resilience efforts.
- Cross-sectoral and holistic approaches to design, plan and implement adaptation and climate resilience efforts at all levels, for more effective action.

C. Scope of the Assignment

- Conduct intensive literature review focusing on peer-reviewed journal articles on rainwater harvesting and intervention coastal region in Bangladesh and similar places
- Preparing a community action plan for the Signal Tower Colony, Mongla through community consultation;
- Sharing the action plan with Mayor and ward councilor;
- Intervention location selection and community mobilization;
- Construction of rainwater harvesting plant; community based (minimum 20k liters) on demand.
- Formalizing a process of Operation and maintenance of the RWH plant;
- Prepare a project completion report capturing the process of implementation
- Prepare awareness programs on issues related to tenure and differences, and document clinics to empower communities to understand needs and rights, for example without documents you cannot access water services, etc.
- Sharing a financial report on the entire project implementation cost of water for Mongla and housing for korail

Chapter 2: Details of the Project Activity

Shushilan Ltd. successfully completed the project in collaboration with ICCCAD and community engagement from January to April 2023. The project activities were carried out according to the project plan, with meticulous attention to quality standards and compliance with regulations and permits. The local community actively participated in the project, contributing to its success. The achievements of the project include the timely completion of activities, successful stakeholder engagement, and adherence to project agreement requirements. The collaborative efforts of all stakeholders resulted in a successful project outcome.

2.1 Transact walking

Shushilan Ltd. conducted a site visit from 15 to 17 January 2023 as part of their rainwater harvesting project in the informal settlement area of Mongla Signal Tower Colony. The purpose of the visit was to identify the most suitable location for the construction site, considering factors such as accessibility, rooftop area, and community needs. Through careful consideration and consultation with stakeholders including the mayor, ward councilor, and community members, an area was selected that is easily accessible from the target buildings and has sufficient rooftop area for rainwater collection. This proactive approach by the Shushilan Ltd. team ensures that the project work is carried out smoothly and in alignment with the community requirements, contributing to the successful completion of the project.

2.2 Field visit with ICCCAD Team

The Shushilan Ltd. team, along with Michael Collyer, a professor at the University of Sussex, Juel Mahmud, the program coordinator at ICCCAD, and Mustafa Bakuluzzaman, the managing director at Shushilan Ltd., visited all potential areas for constructing the rainwater harvesting system during their field visit to Mongla Signal Tower Colony. They also interacted with the local community to comprehend their requirements and perspectives regarding the project. This field visit was a crucial step in successfully implementing the rainwater harvesting system and ensuring that it met the community's needs. Shushilan Ltd. gained an understanding of the project area, the needs and demands of the people, and the involvement of local representatives. Subsequently, Shushilan Ltd. made several visits to the area to gain further insight.

Figure 1: Field Visit with Shushilan Ltd. Team and ICCCAD team

2.3 Attend a photovoice workshop organized by ICCCAD

- ✓ **Workshop focused on Water at Mongla:** The Photovoice workshop organized by ICCCAD on 16 January 2023 in Mongla proved to be a significant event that shed light on the water-related challenges faced by the residents of Signal Tower Colony. The workshop brought together a diverse group of community members, including women, youth, and elderly people, who shared their perspectives on the water situation in their community.

Through their photographs, they highlighted the acute water shortage, contaminated water use, long waiting times for water supply, and the high cost of purchasing water from private vendors. The photographs also revealed the adverse impact of water scarcity on the health, hygiene, and overall well-being of the community members, particularly women and children, who are forced to travel long distances to collect water from distant sources.

Figure 2: Attend a photovoice workshop organized by ICCCAD at Mongla

The Photovoice workshop served as a catalyst for community engagement and action, prompting residents and stakeholders to come together and work towards improving the water situation in Signal Tower Colony. Overall, the workshop was a significant step towards raising awareness and advocating for the urgent need to address the water-related challenges faced by communities like Signal Tower Colony.

- ✓ **Workshop focused on Housing at Dhaka:** On March 9, 2023, ICCCAD organized a Photovoice workshop at BRAC Center that was a noteworthy occasion shedding light on the severe housing predicaments faced by Korail's informal settlement area residents in Dhaka. The event was attended by a diverse group of participants, mainly from Korail, providing a unique perspective on the community's challenges. The participants exhibited their pictures portraying various aspects of life in the settlement, including water and sanitation, health, and housing. However, most of the photos were housing-related, emphasizing the issue's severity. The discussion that followed aimed to identify solutions to the community's housing-related issues, with NGOs working in Korail taking an active role.

Figure 3: Attend a photovoice workshop organized by ICCCAD at BRAC Center, Dhaka

The event was crucial for Shushilan Ltd as it was involved in a housing intervention in the region. The insights gathered from the workshop were valuable in shaping the project and ensuring it aligned with the community's needs. Overall, the Photovoice workshop offered a distinctive viewpoint on Korail's inhabitants' housing issues, providing an enlightening experience. The event brought together stakeholders from various sectors to work collaboratively and find solutions to the community's challenges, making it a significant contribution to ongoing efforts to improve living conditions in the settlement.

2.4 Community Consultation

In a community consultation process conducted for the improvement of water access in the informal settlement area of Mongla Signal Tower Colony, the team from Shushilan Ltd. and ICCCAD conducted a field visit and held meetings with the mayor and councilor of the Municipality and local community members through Focus Group Discussions (FGD). During the consultations, valuable insights were gained on the social, economic, and environmental aspects of the project. The mayor and councilor expressed their commitment to support the project and agreed to provide technical and logistical assistance. The FGD also revealed the need for sustainable water supply solutions in areas without access to a municipality water line, leading to the proposed formation of a committee for Rainwater Harvesting System (RHS) maintenance and the construction of a rainwater harvesting system in Namarchar.

✓ Meeting with Mayor and councilor

The team from Shushilan Ltd. and ICCCAD conducted a field visit to identify suitable locations for rainwater harvesting systems in the informal settlement area of Mongla Signal Tower Colony. Following the field visit, a meeting was held at the Municipality office with the mayor and councilor to present the project objectives, methodology, and identified locations for the rainwater harvesting systems. The mayor and councilor expressed their appreciation for the project's goal of addressing water scarcity in the area and acknowledged the significance of rainwater harvesting systems as a sustainable solution for water management. They provided valuable insights on the social, economic, and environmental aspects of the project, emphasizing the need for community engagement and participation to ensure sustainability and scalability. The mayor and councilor also agreed to provide technical and logistical support, as well as mobilize resources to ensure the timely and successful implementation of the project.

Figure 4: Meeting with the Mayor and Councilor of Mongla Port Municipality

✓ Field visit with Mayor and councilor

The field visit to Mongla Signal Tower Colony, led by the mayor and councilor, was an essential step towards improving water access in the informal settlement area. The mayor's engagement with the community during the visit demonstrated their commitment to the project and the people. The presence of the Shushilan Ltd. team during the field visit enabled them to gather firsthand information on the water situation in the community and engage with community members to better understand their needs and preferences. This engagement is critical for the success of the project.

✓ FGD in three different areas:

Three Focus Group Discussions (FGDs) were conducted in different areas of the community, namely Moddhochar, Uttorchar, and Namarchar, to discuss the water supply situation. The FGDs revealed that Moddhochar and Uttorchar have access to a municipality water line, which ensures a continuous supply of water. In contrast, the people of Namarchar face water scarcity and rely on their water storage capacity, which poses a challenge, especially during the dry season when water sources become scarce. To address this issue, the community members of Namarchar proposed forming a committee to maintain a Rainwater Harvesting System (RHS) in the area. The committee would ensure the system's proper functioning and address any maintenance issues. Additionally, the Mayor has identified a suitable location in Namarchar for constructing a rainwater harvesting system, which would provide the community with a sustainable source of water. The FGDs underscored the need for sustainable water supply solutions in areas without access to a municipality water line. The proposed committee for RHS maintenance and the construction of a rainwater harvesting system in Namarchar could be significant steps toward addressing the water supply challenges in the area.

Figure 5: FGD conducted in Uttorchar, Signal Colony Tower, Mongla

2.5 Administrative Clearance and Land Secured for Namarchar RHS

The process of securing administrative clearance and obtaining the land for the Rainwater Harvesting System (RHS) project involved several meetings and negotiations with the Mayor of Mongla Port Municipality. The team from Shushilan and ICCCAD presented their plans and objectives for the project, highlighting the need for sustainable water supply solutions in the area. They also identified potential locations for the RHS project and assessed their suitability based on various factors such as accessibility, water availability, and community needs.

After careful consideration and evaluation, the mayor agreed to allocate a piece of land measuring 33*23 square feet in the Namarchar area for the RHS project. The location of the land was deemed suitable for the construction of the rainwater harvesting system and had the necessary resources for the project's successful implementation. The team also received written permission from the mayor to use the allocated land for the RHS project, providing them with the necessary administrative clearance to proceed with the construction work. The acquisition of the land and administrative clearance were significant milestones in the project's progress and brought the team one step closer to their goal of providing sustainable water access to the community.

2.6 Project site visit and design for RHS construction work by Engineer

The Shushilan team, accompanied by an experienced engineer, visited the proposed construction site for a rainwater harvesting system (RHS) in the Mongla Signal Tower Colony. The engineer carefully observed the area, taking into account factors such as terrain, elevation, soil type, existing infrastructure, water sources, and drainage systems to assess the feasibility of the project. The team also engaged with the local community to understand their water needs and gather feedback on the proposed RHS project. After visiting the proposed construction areas, the engineer developed a design for the RHS that included two 10,000-liter water tanks, totaling to 20,000 liters of water storage capacity. The design was carefully crafted to withstand the weather conditions and heavy usage that it would likely encounter. The construction design for the RHS in the informal settlement area of Mongla Signal Tower Colony was planned and executed efficiently, aiming to provide a sustainable and long-lasting solution for harvesting rainwater in the area.

The project is executed with the aim of providing a sustainable and long-lasting solution for harvesting rainwater in the area. With the successful completion of the project, the community in the area now has access to a reliable source of water for their daily needs, while also contributing to the conservation of natural resources and the reduction of water scarcity in the region. The project is a significant step towards addressing the water supply challenges in the area and ensuring a sustainable future for the community.

2.7 Construction Inauguration of RHS Work

The construction of a rainwater harvesting system (RHS) at Signal Colony Tower in Mongla was inaugurated on March 15, 2023. The construction work was carried out by Shushilan Ltd. in collaboration with all stakeholders, including the councilor, mayor, local elite, political figures, and community members. Shushilan Ltd. ensured an inclusive approach to the construction process, finalizing the design through consultations with local representatives to meet the community's needs and preferences. The contractor was provided with a work schedule to ensure timely completion of construction tasks while maintaining the quality of work. The construction work was expected to be completed by the end of April, providing a much-needed solution for rainwater harvesting in the area.

Figure 6: Inauguration of RHS Construction work

The event marked a significant milestone for the community, providing them with access to a reliable source of water and contributing to the reduction of water scarcity in the area, benefiting both the people and the environment.

2.8 Quality control of RHS Construction work

- ✓ **Formation of community-based construction monitoring committee**

To ensure that the construction work for the rainwater harvesting system (RHS) at Signal Colony Tower in Mongla met the required quality standards, Shushilan Ltd. established a community-based construction monitoring committee. The committee comprised four members, including one female committee member, selected for their expertise in construction-related matters. The committee's primary responsibility was to monitor the construction work and report any deviations from the project plan to Shushilan Ltd. officials. By providing a mechanism for community participation and oversight, the committee helped ensure that the construction work was of high quality and met the needs of the local community. The formation of the committee was well-received by the community and increased transparency and accountability in the construction process. The committee served as a crucial link between the community and Shushilan Ltd. officials, providing a platform for dialogue and ensuring that any concerns or issues were addressed promptly. In summary, the establishment of the community-based construction monitoring committee was an essential step toward ensuring the quality and success of the RHS construction project.

Figure 7: Formation of Construction Monitoring Committee

List of community-based construction monitoring committee:

SI	Name	Designation	Mobile Number
1.	Mustafizur Rahman Mosharraf	President	01965054335
2.	Jabbar Farazi	Vice President	01988513825
3.	Salma Akter	Secretary	01862249690
4.	Mahfuz	Member	01736663520
5.	Majnu Gazi	Member	01710735968

Providing terms and conditions for the contractor to adhere to during construction in order to monitor the project

After the completion of the rainwater harvesting system (RHS) construction work, it is important to ensure that the system has been installed correctly and meets the necessary quality standards. The following conditions should have been adhered to during the construction process to ensure the functionality and efficiency of the system:

- ✓ The RHS should have been installed according to the approved design. Deviations from the design could compromise the effectiveness of the system.

- ✓ The storage tank should have been made of durable and non-toxic materials to prevent contamination of the collected rainwater. The tank should have been properly sealed to prevent the entry of insects and other contaminants.
- ✓ The brickwork of the RHS should have been allowed to dry for a minimum of 10 days after completion. This is important to ensure that the brickwork is strong and durable.
- ✓ Any RCC structures, including pillar columns, should have been allowed to dry for at least 21 days after casting and wrapped with jute bags during this period. This ensures even drying and helps to prevent cracking.
- ✓ Suitable pipes and fittings should have been used to ensure that the system can withstand the intended loads and is resistant to corrosion. Corrosion can compromise the efficiency of the system and increase the risk of contamination.

Following these conditions during the construction process helps to ensure that the quality of the work is high and the risk of structural issues and failures is minimized.

2.9 Beneficiary Selection

In our rainwater harvesting project, we initially planned to select beneficiaries through a lottery process, focusing on the 20 households located near the RHS water tank. Our goal was to provide water for 75 days to these families. However, during the inauguration, community members expressed their desire to share the water with other families facing water shortages from February to May. They provided a list of 49 families in the surrounding area who were experiencing water scarcity. After discussing this proposal with the local representatives and community elites, it was decided that the RHS system would provide water to all 49 families around the water tank. This decision was made with the understanding that the families would receive 30 days' worth of water demand for their household needs. Shushilan Ltd., the organization responsible for the project, accepted this proposal.

In summary, the initial plan to serve 20 households for 75 days was modified after community input and discussion. The revised plan now serves 49 households for 30 days each and was agreed upon by all parties involved.

List of beneficiaries for RHS:

SL No.	*Name of the Beneficiaries (Head of the Family)*	*SL No.*	*Name of the Beneficiaries (Head of the Family)*	*SL No.*	*Name of the Beneficiaries (Head of the Family)*
1.	Reba Begum	18.	Forid	35.	Akon Mucalli
2.	Jolil Hawlader	19.	Jolil Hawlader	36.	Hena Begum
3.	Shilpi Begum	20.	Shirina Begum	37.	Nur Jahan
4.	Rofikul	21.	Manan Foragi	38.	Shapon
5.	Habib	22.	Zamal Sharif	39.	Md Ripon
6.	Harun	23.	Abul Hosen	40.	MD Jobbar
7.	Rafuk	24.	Kamrul	41.	Shomser
8.	Sagor	25.	Babul Hawlader	42.	Khadol

9.	karim	26.	Nasima Begum	43.	Aruna
10.	sofikul	27.	Abdur Rahman	44.	Khokn Fokir
11.	Rofiqual	28.	Kodeza Begum	45.	Hasan Mojumdar
12.	Ariful	29.	Iqbal	46.	Taslima
13.	Aslam	30.	Nobab Ali	47.	Musur Forazi
14.	Khalil	31.	Fatema	48.	Shamser Huzur
15.	Abu Taher Forazi	32.	Bellal Forazi	49.	MD Jahangir
16.	Humayun Kabir	33.	Malek Mollah		
17.	Forkan	34.	Khalek Mollah		

2.10 Operation and Maintenance Committee

To ensure the proper distribution of water and the maintenance of the Rainwater Harvesting System (RHS), an Operation and Maintenance Committee has been formed. The committee consists of five members, including a president, vice president, secretary, and two general members. Their primary responsibilities include overseeing the distribution of water and carrying out necessary maintenance tasks for the RHS system. The committee has implemented a schedule for water distribution, aiming to provide water once or twice a week to the beneficiaries. On each distribution day, one committee member takes the lead in overseeing the water distribution process. This approach ensures a systematic and organized distribution of water among the community members. In addition to their distribution role, the committee charges a minimum fee for each jar of water. The collected fees are utilized to create a fund for any major repairs or maintenance work required for the RHS system in the future. This financial mechanism guarantees the sustainability of the RHS project and enables the committee to address any potential issues promptly.

Figure 8: Formation of Operation and Maintenance Committee

The Operation and Maintenance Committee also plays a crucial role in raising awareness among the beneficiaries about the importance of water conservation, proper utilization of the RHS system, and the significance of regular maintenance. By conducting awareness campaigns and engaging with the community, the committee educates and empowers the beneficiaries to actively participate in the long-term upkeep of the RHS system.

List of Committee Members with Designation:

SI	Name	Designation	Mobile Number
1.	Md. Karim	President	01960-07238l
2.	Salma Akter	Vice President	01862249690
3.	Md. Ripon Hawlader	Secretary	01728-567344
4.	Md. Kamruzzaman	Member	01408-223182
5.	Shilpi Akter	Member	01906-367352

These dedicated committee members will work together to ensure the smooth operation and maintenance of the RHS system, benefiting the community and fostering sustainable rain water management practices.

2.11 Inauguration of RHS

On the 10th of May 2023, an auspicious occasion took place in Namarchar, Mongla, as Shushilan Ltd. proudly inaugurated a state-of-the-art Rainwater Harvesting System (RHS). The event witnessed the presence of numerous esteemed guests, including the respective Ward Councillor, local political figures, community members, and representatives from Shushilan Ltd. The community members expressed their overwhelming happiness, as they had been facing severe water crises during the dry season every year. The installation of the RHS brought newfound hope and relief to the community, as they would no longer have to embark on long, arduous journeys by foot to collect water. The local community spoke passionately about the positive impact this RHS would have on their lives. They eagerly anticipated the alleviation of the water crisis that had plagued them for years. Recognizing the immediate benefits of the project, the community members fervently requested the installation of more RHS units throughout their community to combat the water scarcity experienced during the dry season. Their demand was met with understanding and consideration from the word councilor and local elite, who wholeheartedly expressed their gratitude towards Shushilan Ltd. and the International Centre for Climate Change and Development (ICCCAD) for their concerted efforts in constructing this pivotal RHS.

Figure 9: Inauguration of RHS for Community people

The inauguration ceremony symbolized a significant step forward in providing sustainable access to clean water for the community of Namarchar, Mongla. It was a moment of collective celebration and hope, signifying the power of collaboration and innovative solutions to address pressing environmental challenges. The success of this project highlighted the importance of community engagement, public-private partnerships, and the tireless dedication of organizations like Shushilan Ltd. and ICCCAD in improving the lives of individuals and safeguarding the environment.

2.12 Repair and reconstruct the municipality's water collection point

As part of our efforts to improve the hygienic conditions in the community, we have repaired the water collection point at the 9 number Word counselor house. The repair work, which was completed by Shushilan Ltd., included the construction of a concrete floor and plastering of the water collection point. The water collected here will be available for the community people free of charge. To ensure the sustainability of this water collection point, the RHS committee will

monitor it regularly and carry out necessary maintenance work. This initiative is an important step towards promoting better sanitation practices and building a healthy and sustainable community where everyone has access to basic necessities like clean water.

Figure 10: Repair and reconstruction of the municipality's water collection point

2.13 Housing Intervention in Korail

On March 20, 2023, Shushilan Ltd. organized a successful workshop on housing intervention in the Korail informal settlement area in Mohakhali, Dhaka. The workshop was held at the Korail Kindergarten and High School venue and was attended by 24 participants, consisting of 16 females and 8 males. The Managing Director of Shushilan Limited, Mr. Mustafa Bakuluzzaman, Monitoring and Evaluation Officer, Kazi Faisal Kabir, Management Trainee, M M Mehedi Hasan Nirob, and Sharmin Jaman Sristy, as well as two research officers from ICCCAD, Md. Lutfor Rahman and Farhin Rahman Reeda were present in the workshop. During the workshop, Mr. Bakuluzzaman delivered a speech on housing and the agenda for the workshop. The participants were divided into three groups, and each group was provided with question papers, brown paper, and marker pens to complete their assignments. The participants took 20-25 minutes to complete the assignment, and each group presented their answers for 5-10 minutes.

Figure 11: Housing Intervention in Korail

During the workshop, it was discussed that there are various organizations such as Cooperative Organization, Adolescent Club, Jubo Nari Unnoyan Songostha, Bosti Unnoyon Committee, CBO, Change Maker, Sundarban Rin, and Blaza working in the Korail Informal Settlement area. However, no NGOs provide housing loans for Korail. It was also discussed that various government and private organizations are currently working in the area, including City Corporations, DESCO, WASA, Manobik Sikitsha, DSK, BRAC, Proshika, ASA, Bureau Bangladesh, Sokti, and Manobik Sahajjo Songosta. However, there is currently no housing project in Korail. Regarding private housing services, the majority of participants said that there are no

providers in the Korail informal settlement area. Most of the participants said they have no plans to buy land or relocate anywhere, while some mentioned that they would consider it if a permanent residence is made available in installments through the government or an NGO. They are currently saving for their future through daily, weekly, monthly, quarterly, yearly, and microcredit deposits.

At the last session of the workshop, they talked about their dreams, plans, and expectations for housing. They want various facilities from the government, such as permanent, sustainable, and environmentally friendly housing with attractive employment opportunities, monthly allowances for the elderly, permanent land, and scholarships for children in schools and colleges for higher education. They especially want a government quota.

Chapter 3: Monitoring and Field Visit

3.1 Pre-Construction monitoring

In this project, Shushilan ltd. followed the recommended pre-construction monitoring procedures to ensure that the project was properly planned and permitted before the start of construction. We conducted a thorough evaluation of the project site, including a site visit to assess the current condition of the area and to identify any potential issues or concerns that needed to be addressed prior to the start of construction. During the evaluation, we reviewed all project documents, including drawings and specifications, to ensure that the project was properly designed and that all required elements were included. We also worked with stakeholders, such as contractors, engineers, community people councilors and municipality mayor, to ensure that their roles and responsibilities were clearly defined and understood. Through the pre-construction monitoring process, we were able to identify and address any potential issues or concerns that could have impacted the construction process. This helped us to minimize delays, misunderstandings, and conflicts during the construction phase, ultimately leading to a smoother and more efficient project.

Overall, our adherence to the pre-construction monitoring procedures helped us to ensure that our project was properly planned and permitted and that we were able to address any potential issues before they become major problems.

3.2 Monitoring During Construction

During the construction of the RHS project for sustainability, Shushilan Ltd. implemented a dynamic monitoring approach known as Monitoring During Construction. The construction monitoring committee ensured that all construction work was properly monitored throughout the entire project. Additionally, the project engineer made frequent visits during construction to ensure that the work met the required quality standards. The monitoring process also involved engaging with local representatives, elites, and community members. By involving these stakeholders, the project team was able to ensure that the community's needs and concerns were taken into account during the construction process.

3.3 Monitoring after construction

After the successful construction of the rainwater harvesting system, Shushilan Ltd. has implemented several plans to ensure the sustainability and proper maintenance of the RHS system, as well as smooth water distribution to beneficiaries. To ensure proper water distribution, Shushilan Ltd. has established a water distribution committee that charges a minimal fee of Taka per full jar of water from beneficiaries. This fee is deposited into a dedicated bank account, which serves as a savings fund for any major repairs that the RHS system may require in the future. Additionally, an operation and maintenance committee has been formed, which is responsible for the regular maintenance of the RHS system. This committee conducts routine inspections and repairs any issues that arise, ensuring that the system operates smoothly. Furthermore, Shushilan Ltd. emphasizes the importance of community involvement in the sustainability of the RHS system. Local representatives, elite members, and community people are encouraged to participate in the operation and maintenance committee and the water distribution committee. This involvement not only ensures the sustainability of the RHS system but also fosters a sense of ownership and responsibility within the community towards this valuable resource.

Overall, the measures taken by Shushilan Ltd. to maintain and sustain the RHS system reflect their commitment to providing a reliable and long-lasting solution for safe and accessible water for the community.

Chapter 4: Lesson Learned

The "Towards Trajectories of Inclusion: Making Infrastructure Work for the Most Marginalized" project has taught valuable lessons in development projects. One of the most critical lessons learned is the importance of involving local communities and stakeholders, local Elite persons, the Municipal Mayor, and councilor in the project from the beginning. This collaboration helped us to identify the Proper needs and problems faced by the common people in the project area, also assisted to find out suitable locations, designing effective solutions, and ensuring sustainability and positive impacts on the target population's lives. Some of the key points that emphasize the importance of community involvement in development projects are:

- ✓ Local communities and stakeholders must be involved in the planning process of the project from the beginning. This ensures that the project's design meets the needs of the target population and is sustainable in the long term.
- ✓ Local leaders, such as Elite persons, Municipal Mayor, and councilors, should be involved in the project as they have a deep understanding of the local context and can help ensure the project's success.
- ✓ Collaboration with local communities and stakeholders can help build trust and ensure community ownership of the project. This can also help overcome any resistance or opposition to the project.
- ✓ Involving local communities and stakeholders can also help identify potential challenges and provide solutions to address them. This can help mitigate risks and ensure the project's success.

In conclusion, the involvement of local communities and stakeholders is crucial in ensuring the success of development projects. Their collaboration can help identify the Proper needs and problems, design effective solutions, ensure sustainability, and create a positive impact on the target population's lives. Collaboration with local leaders and stakeholders can also help build trust, ensure community ownership, and overcome any challenges faced during the project's implementation.

Chapter 5: Challenges

The implementation phase of the rainwater harvesting system (RHS) project was not without its challenges. Despite the best efforts of the team, several obstacles had to be overcome to ensure the project's success.

- **Identification of appropriate beneficiaries:** One of the major challenges encountered during the implementation phase was identifying the most suitable beneficiaries for the RHS project. With a limited budget, the team had to determine which families would benefit the most from the RHS and conduct thorough assessments to make an informed decision.
- **Supply of water during the crisis period:** Another major challenge was the supply of water to 49 families during the super water crisis period. The proposed 20,000-liter RHS was only capable of supplying water for 28 days, which was a very short time compared to the period of water scarcity. The team had to come up with an alternative plan to ensure that the families had access to sufficient water during the crisis period.
- **Prolonged construction work:** The heavy sunshine and high temperature in the project area prolonged the construction work, making it difficult to complete the project on time.
- **Finding a good contractor:** Finding a good contractor to construct the RHS was also a challenge. The team had to conduct thorough research and evaluate multiple contractors before selecting the most suitable one for the job.
- **Difficulty in regular monitoring:** As the project was monitored from the Dhaka office, it was challenging to regularly visit the project area, which could have impacted the timely identification and resolution of any issues or challenges.

Despite these challenges, the team was able to overcome them and successfully implement the RHS project. They demonstrated resourcefulness, resilience, and creativity in finding solutions to the various obstacles that arose during the implementation phase. The lessons learned from these challenges will undoubtedly help the team to implement future projects with greater efficiency and effectiveness.

Chapter 6: Recommendations

Based on the successful implementation of the Rainwater Harvesting System (RHS) project in Mongla Signal Tower Colony, several recommendations emerge to enhance the project's impact and ensure its long-term sustainability. These recommendations aim to address the water scarcity challenges faced by communities and promote efficient water management practices. By implementing these recommendations, the project can serve as a model for future initiatives and inspire similar interventions in other regions. The following recommendations are proposed to further strengthen the RHS project and maximize its benefits for the community:

- **Expansion of RHS Installations:** Based on the successful implementation and positive impact of the Rainwater Harvesting System (RHS) in Mongla Signal Tower Colony, it is highly recommended to explore opportunities for expanding the installation of RHS in other communities that are also facing water scarcity issues. In our current community, there are 49 beneficiary families with a total of 250 family members. To ensure an adequate water supply for these people during the dry season, we would require a minimum of a 90,000-liter water harvesting system.
- **Community Awareness Programs:** To maximize the effectiveness of RHS projects, it is essential to conduct community awareness programs and provide education on the importance of water conservation, proper utilization of rainwater, and maintenance of the RHS system. These programs can include workshops, training sessions, and informative campaigns to ensure the long-term sustainability of the projects.
- **Regular Monitoring and Maintenance:** Implementing a comprehensive monitoring and maintenance plan is crucial to ensure the continuous functionality of the RHS system. Regular inspections, cleaning of storage tanks and filters, and repair of any damages or leaks should be carried out by a dedicated team. Additionally, involving community members in the monitoring and maintenance process can foster a sense of ownership and responsibility.
- **Collaboration with Local Authorities:** To enhance the impact and reach of RHS projects, it is recommended to establish strong collaborations with local authorities, such as municipal bodies and government agencies responsible for water management. This collaboration can facilitate the identification of suitable locations for RHS installations, obtaining necessary permits, and accessing resources and expertise to implement and sustain the projects effectively.
- **Research and Innovation:** Encouraging research and innovation in rainwater harvesting technologies and techniques can lead to improved systems and more efficient utilization of rainwater resources. Investing in research initiatives, partnerships with academic institutions, and technology-driven solutions will contribute to the continuous improvement and advancement of RHS projects.
- **Scalability and Replicability:** The successful implementation of RHS projects in Mongla Signal Tower Colony provides an opportunity to replicate and scale up similar projects in other regions facing water scarcity challenges. Documenting and sharing best practices,

lessons learned, and project outcomes will enable other organizations, communities, and policymakers to replicate these initiatives and adapt them to their specific contexts.

- **Long-term Funding and Support:** Sustainable funding mechanisms should be established to ensure the continuity of RHS projects. This can be achieved through a combination of government funding, corporate social responsibility initiatives, grants from development organizations, and community contributions. Securing long-term financial support will help sustain the projects, including monitoring, maintenance, and future expansions.

By implementing these recommendations, the Rainwater Harvesting System projects can have a broader impact in addressing water scarcity issues, promoting community resilience, and contributing to sustainable water management practices.

Chapter 7: Conclusion

The Rainwater Harvesting System (RHS) project undertaken by Shushilan Ltd. in collaboration with the International Centre for Climate Change and Development (ICCCAD) has been successfully completed, bringing about positive changes in the lives of the residents in the informal settlement areas of Mongla Signal Tower Colony and Korail. The project, implemented from January to April 2023, followed a well-planned approach, ensuring adherence to quality standards and compliance with regulations and permits. Through extensive field visits, community consultations, and workshops, the project team meticulously identified the most suitable locations for the installation of rainwater harvesting systems. The engagement of community members, including women, youth, and the elderly, provided valuable insights into the water-related challenges faced by the communities. The project also involved securing administrative clearances and land acquisition, which required multiple meetings and negotiations with relevant stakeholders, including the Mayor of Mongla Port Municipality. The construction of the rainwater harvesting systems was carried out with utmost dedication and involvement from all stakeholders, and a community-based construction monitoring committee was established to ensure the quality of the work. The inauguration of the Rainwater Harvesting System in Namarchar, Mongla, was a momentous occasion, attended by esteemed guests, local political figures, and community members. The system was warmly welcomed by the community, who expressed their happiness and gratitude for resolving the severe water crisis faced during the dry season. Additionally, the project expanded its scope beyond the initial beneficiaries, with community members generously sharing the water supply with other families experiencing water scarcity. This spirit of collaboration and empathy further strengthened the project's impact and ensured that more families could benefit from the Rainwater Harvesting System. Furthermore, efforts were made to improve hygienic conditions within the community, such as repairing the water collection point at the Word Councilor’s house. The sustainability of these initiatives was prioritized, with regular monitoring and maintenance carried out by the RHS committee.

Overall, the Rainwater Harvesting System project has successfully addressed water scarcity issues, enhanced community engagement, and promoted sustainable water management practices. The collaboration between Shushilan Ltd., ICCCAD, local authorities, and the community has been instrumental in the project's success. The positive outcomes of this project serve as a testament to the importance of innovative solutions, community participation, and public-private partnerships in improving the lives of individuals and addressing pressing environmental challenges.

Annex-1: Photo Gallery

1. Transact Walking in the Project Area

2. Attend Photovoice workshop at Mongla

3.Meeting and field visit with Mongla Port Municiaplity

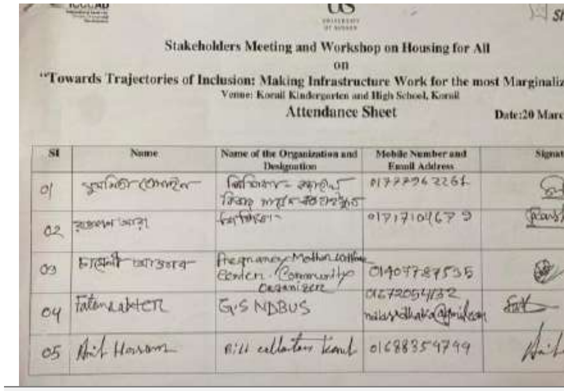
Annex-2: Rainwater Harvesting System Construction Work

1. Field visit and starting of Construction Work

2. Construction phase work

3.Fully construction of Rainwater harvesting system

Annex-3: Participant Attendance sheet of Korail housing intervention workshop



Stakeholders Meeting and Workshop on Housing for All

on

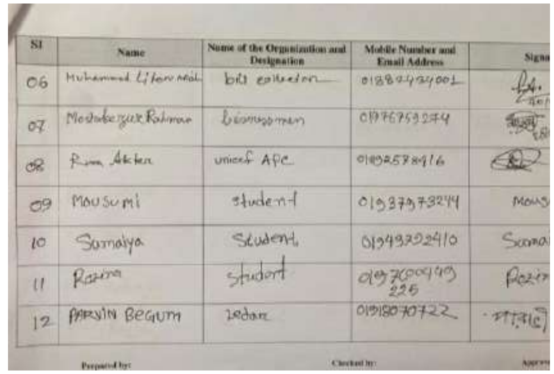
"Towards Trajectories of Inclusion: Making Infrastructure Work for the most Marginaliz

Venue: Korail Kindergarten and High School, Korail

Attendance Sheet

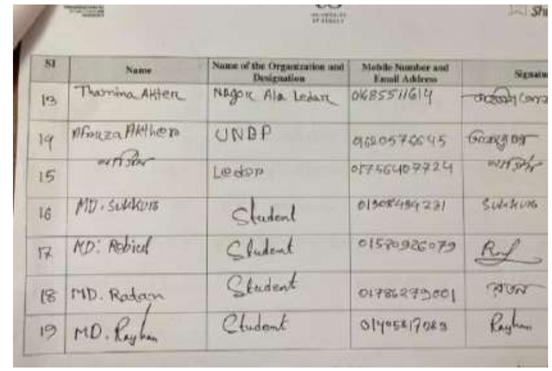
Date:20 Marc

Sl	Name	Name of the Organization and Designation	Mobile Number and Email Address	Signat
01	[illegible]	[illegible]	01777962261	[illegible]
02	[illegible]	[illegible]	01717104679	[illegible]
03	[illegible]	Pregnancy Mother Coffee Center Community Organizer	01407787535	[illegible]
04	Fatema akter	G/S NDBUS	01672054132	[illegible]
05	Arif Hossain	Bill collector Korail	01688354749	[illegible]

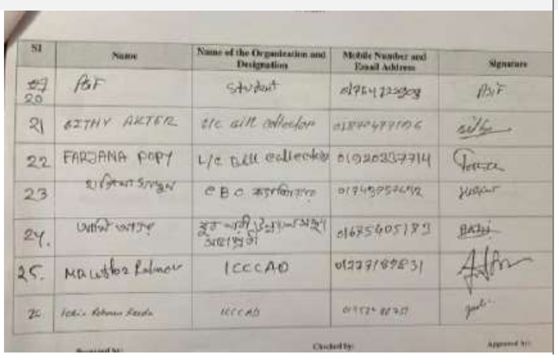


Sl	Name	Name of the Organization and Designation	Mobile Number and Email Address	Signa
06	Muhammad [illegible]	bill collector	01882424001	[illegible]
07	[illegible]	Businessman	01976759274	[illegible]
08	Rima Akter	unicef APC	01832578416	[illegible]
09	Mousumi	student	01937973244	Mous
10	Sumaiya	Student	01949292410	Suma
11	Rozina	student	0197600949 225	Rozin
12	PARVIN BEGUM	Ledar	01918070722	[illegible]

Prepared by: Checked by: Approv



Sl	Name	Name of the Organization and Designation	Mobile Number and Email Address	Signatu
13	Thamina Akter	Nagor Ala Ledar	01685511614	[illegible]
14	Afroza Akther	UNDP	01620576545	[illegible]
15	[illegible]	Ledar	01756407724	[illegible]
16	MD. Sakkib	Student	01308494231	Sakib
17	MD. Robiul	Student	01570926079	[illegible]
18	MD. Radon	Student	01786279001	[illegible]
19	MD. Rayhan	Student	01795817089	Rayhan



Sl	Name	Name of the Organization and Designation	Mobile Number and Email Address	Signature
19 20	Arif	Student	01764722909	Arif
21	SATHY AKTER	c/c bill collector	01874677706	[illegible]
22	FARJANA POPY	C/C bill collector	01920337714	[illegible]
23	[illegible]	C B O [illegible]	01743952692	[illegible]
24	[illegible]	[illegible]	01675405193	[illegible]
25	MD Lutfor Rahman	ICCCAD	01737189231	[illegible]
26	Fakir Rahman Reeda	ICCCAD	[illegible]	[illegible]

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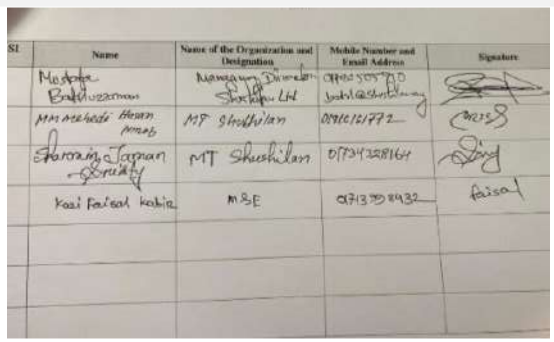
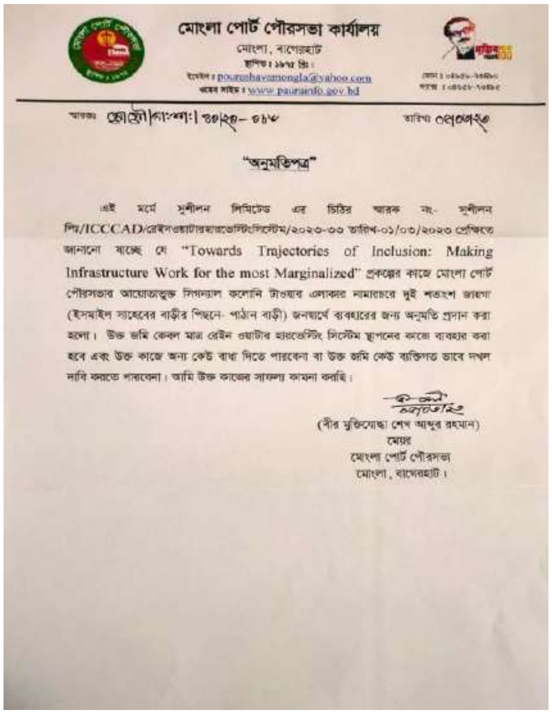


Sl	Name	Name of the Organization and Designation	Mobile Number and Email Address	Signature
	Mostofa Badruzzaman	Managing Director Shelter LH	[illegible]	[illegible]
	MM Mehedi Hasan	MP Shelter	01911121772	[illegible]
	Sharmin Jahan Srishty	MT Shelter	01734328164	[illegible]
	Kazi Faisal Kabir	MSE	01713528432	Faisal

Annex-4: Photo Gallery



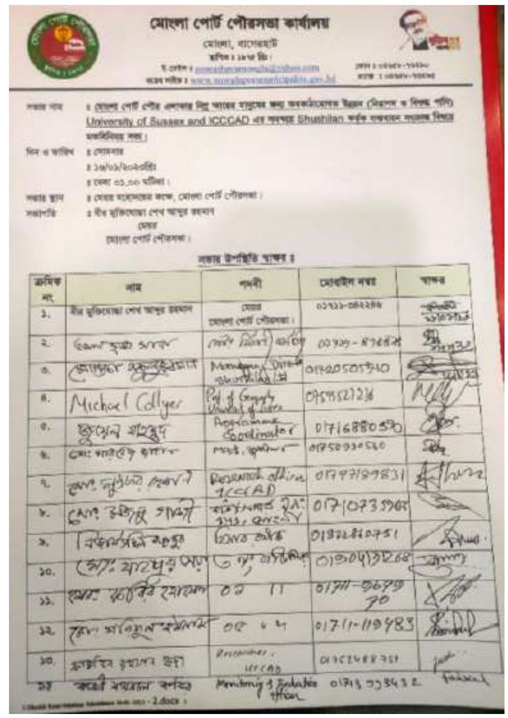
মোংলা পোর্ট পৌরসভা কার্যালয়
মোংলা, বাগেরহাট
ইমেইল: pourashavamongla@yahoo.com
ওয়েব সাইট: www.pauroinfo.gov.bd

"অনুমতিপত্র"

এই মর্মে সুশীলন লিমিটেড এর চিঠির স্মারক নং- সুশীলন লি/ICCCAD/রেইনওয়াটারহারভেস্টিংসিস্টেম/২০২৩-৩৩ তারিখ-০১/০৩/২০২৩ প্রেক্ষিতে জানানো যাচ্ছে যে "Towards Trajectories of Inclusion: Making Infrastructure Work for the most Marginalized" প্রকল্পের কাজে মোংলা পোর্ট পৌরসভার আওতাভুক্ত সিগন্যাল কলোনি টাওয়ার এলাকায় নামমাত্রে দুই শতাংশ জায়গা (ইসমাইল সাহেবের বাড়ীর পিছনে- পাঠান বাড়ী) জনস্বার্থে ব্যবহারের জন্য অনুমতি প্রদান করা হলো। উক্ত জমি কেবল মাত্র রেইন ওয়াটার হারভেস্টিং সিস্টেম স্থাপনের কাজে ব্যবহার করা হবে এবং উক্ত কাজে অন্য কেউ বাধা দিতে পারবেনা বা উক্ত জমি কেউ ব্যক্তিগত ভাবে দখল দাবি করতে পারবেনা। আমি উক্ত কাজের সাফল্য কামনা করছি।

(বীর মুক্তিযোদ্ধা শেখ আব্দুর রহমান)
মেয়র
মোংলা পোর্ট পৌরসভা
মোংলা, বাগেরহাট।

Permission from Mayor to use the Land for RHS



মোংলা পোর্ট পৌরসভা কার্যালয়
মোংলা, বাগেরহাট

University of Sussex and ICCCAD ... Shushilan ...

সভার উপস্থিতি স্বাক্ষর:

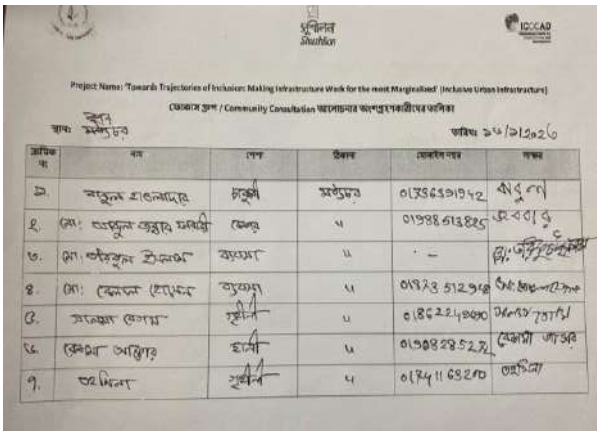
ক্রমিক নং	নাম	পদবী	মোবাইল নম্বর	স্বাক্ষর

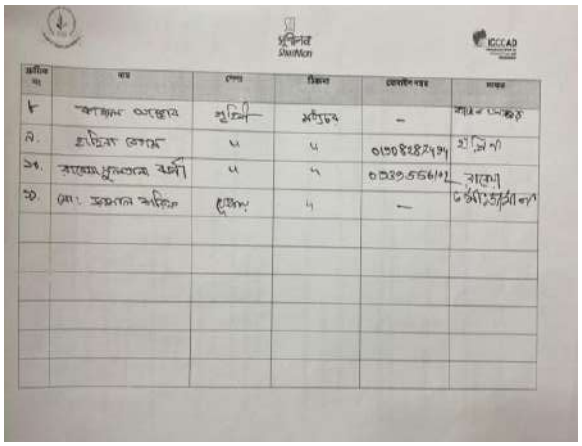
Attendance sheet of meeting with mayor

Banner of Opening program of RHS construction work

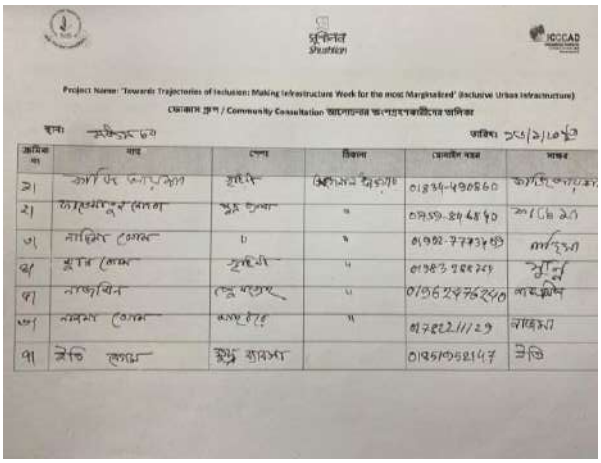
Banner of Workshop on Housing at Korail, Dhaka

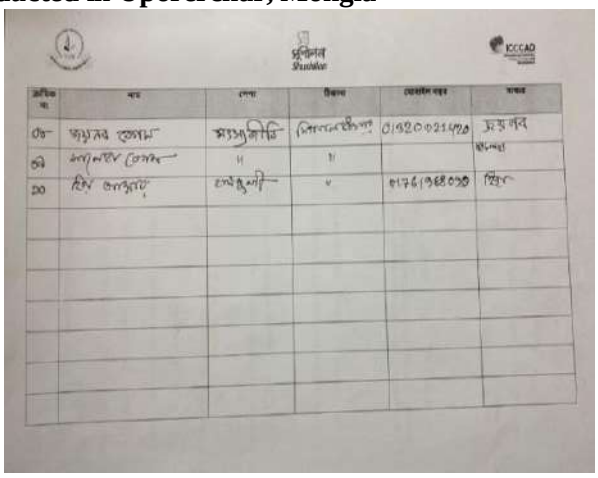
Annex-5: FGD Attendance Sheet



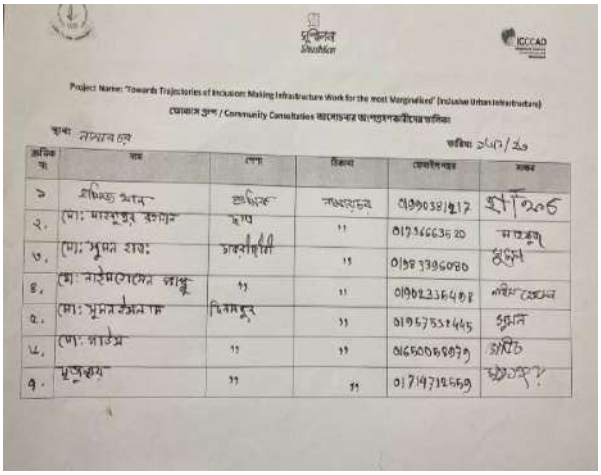


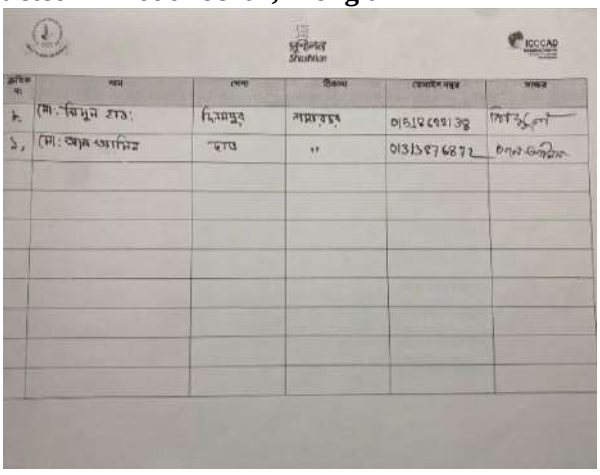
1. FGD attendance sheet conducted in Uporerchar, Mongla





2. FGD attendance sheet conducted in Moddhochar, Mongla





3. FGD attendance sheet conducted in Namarchar, Mongla

Annex 6: Rainwater harvest system design

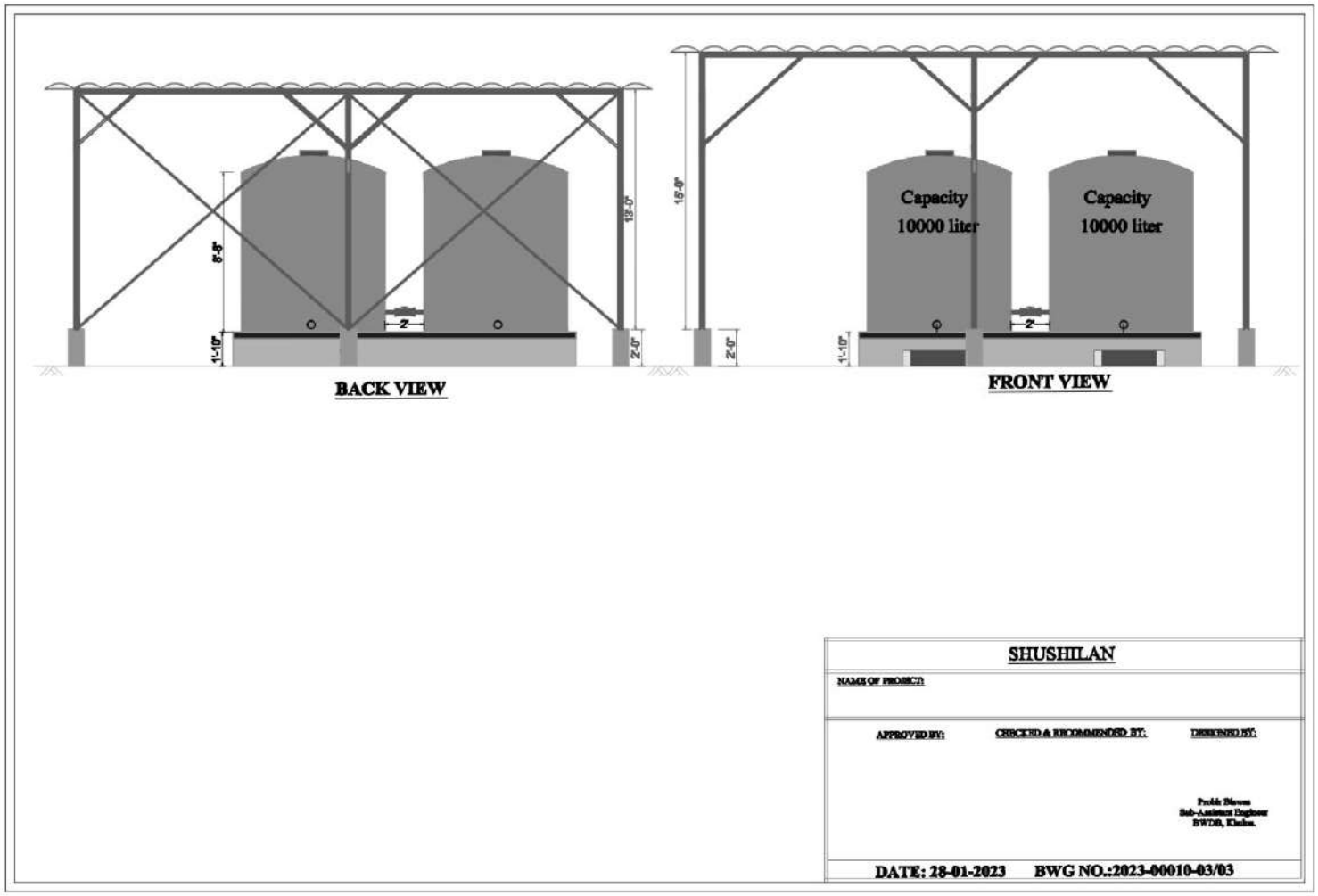


Figure: Back and Front Side View of the Proposed Design

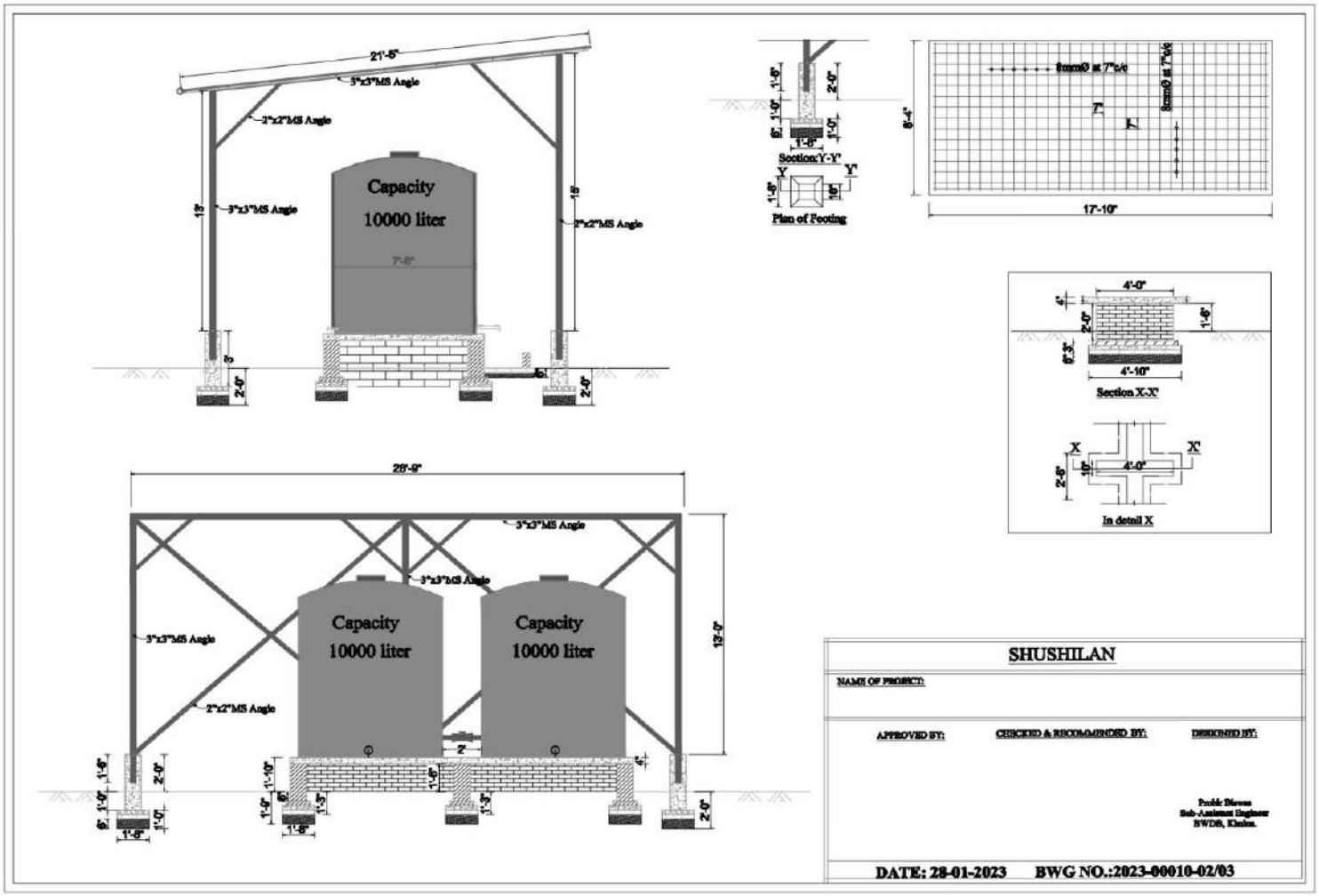


Figure: ***Work Plan of the Rainwater Harvest System***

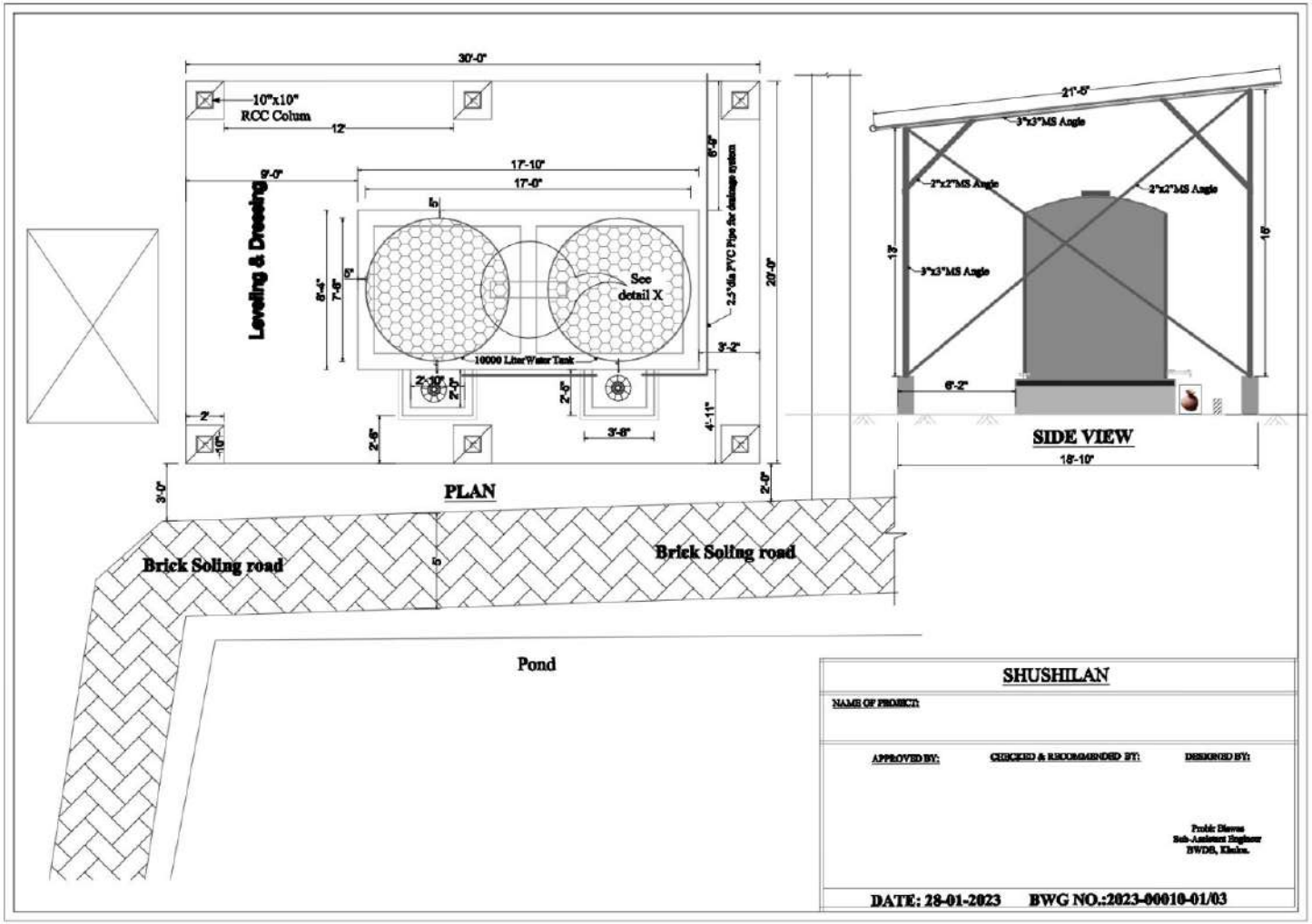


Figure: ***Construction Plan of the Rainwater Harvest System***