



REPORT OF YOUTH FOR CHANGE EDUCATIONAL CENTER WATER, SANITATION AND HYGIENE PROJECT

TECHNICAL REPORT: CONSTRUCTION OF MECHANIZED WATER PROJECT AT YOUTH FOR CHANGE EDUCATIONAL CENTER

Prepared by: Young Visionary Leaders Ghana (YVLG)

Partners: YVLG, LoveSpring, Rungsted Gymnasium,

Project Location: Asofua New Site Kumasi

Date of Completion: 10th August, 2024

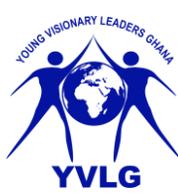
PROJECT OVERVIEW: MECHANIZED BOREHOLE WATER SYSTEM, WASHROOM AND HYGIENE FACILITIES AT YOUTH FOR CHANGE EDUCATIONAL CENTER

During the consultation meeting with the school authorities on November 24th, 2023, Young Visionary Leaders Ghana, in collaboration with AJ Civil Engineering LTD, presented the comprehensive plan for the water, bathhouse, and handwashing facility project. The initiative aims to address the school's significant water and sanitation challenges by constructing a mechanized borehole system to provide a sustainable and reliable source of potable water for over 300 students and approximately 2,000 community members of the Asuofua New Site in the Ashanti Region. The project will also benefit not only the students but also the teaching and non-teaching staff.

The proposed water, bathhouse, and handwashing facilities include a 100-meter-deep borehole equipped with a 2Hp pump to efficiently draw water, a 16/7 feet bathhouse divided for boys and girls with four standing showers (two for each), and four handwashing basins installed in front of the classroom blocks to encourage regular handwashing and prevent contamination. Additionally, there are water connections from the main water station to the washrooms, kitchen, toilets, canteen, and classrooms. The system will be linked to two 7,000-liter tanks mounted on a concrete platform, with 15 taps strategically positioned for easy access by students, staff, and community members. The water station is designed to serve both the school and the community, with eight taps facing outward (six lower taps and two standing taps) and seven taps inside the school for the students and staff.

This setup ensures that the school will have a sufficient water supply for daily use, especially during peak periods in the mornings and evenings. The water project was introduced as a crucial initiative not only to resolve the school's water supply issues but also to improve health, hygiene, and academic performance by creating a more conducive learning environment. The leadership was assured that the system would meet all engineering standards, and a training program was conducted to ensure proper maintenance by the school authorities.

The director of the Youth For Change Educational Center and other key school leaders expressed their full support and were actively involved in selecting the project site, ensuring that the installation would benefit the entire school community.



SITE VISIT AND SCHOOL MANAGEMENT ENGAGEMENT: During the site visit to the Youth For Change Educational Center, a thorough inspection was carried out to evaluate the suitability of different locations for the borehole installation. The process included consultations with the school management, where discussions covered the project's scope, its potential benefits for the school and community, and the anticipated completion timelines. After careful assessment, the team, in collaboration with the school authorities, selected the most suitable site for the borehole, ensuring it would be accessible and serve the entire school and the Asofua New Site Community effectively.

GEOPHYSICAL SITE SURVEY: A comprehensive geophysical survey was conducted at Youth For Change Educational Center to determine the optimal location for drilling the borehole. The survey utilized advanced methods and technologies, including electromagnetic and resistivity techniques, to identify underground water sources and assess soil composition. The results confirmed a viable water source at a depth of 100 meters, ensuring that the selected location would provide a reliable supply of potable water for the school community. The survey also indicated that the site was ideal for sustainable borehole development, with no risks of contamination.

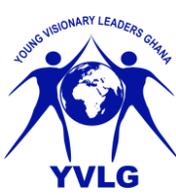
BOREHOLE DRILLING / CONSTRUCTION / DEVELOPMENT: The borehole drilling at YFC School commenced on 2nd Jun 2024. The drilling reached a depth of 100 meters, ensuring access to a reliable and sustainable water source. While the process generally went smoothly, minor challenges such as variations in soil composition were encountered, but these were effectively managed by the drilling team. Strict safety measures were implemented throughout the process, including the use of proper protective equipment and adherence to environmental and safety standards to protect both workers and the surrounding area.

The borehole at Youth For Change Educational Center was constructed with high-quality materials to ensure durability and efficiency. A 100-meter-deep borehole was drilled, and a 1-inch PVC pipe was installed to facilitate water flow. The construction also included a protective casing and proper sealing to prevent contamination.

A sturdy concrete platform was constructed to support two 7,000-liter water tanks, ensuring stability and durability. These tanks are connected to a network of 15 taps strategically positioned for optimal accessibility. Six taps, including four lower taps and two standing taps, are located at the front to serve the Asofua community. Within the school premises, six lower taps are installed on the concrete platform to cater to the school community's needs. Additionally, three taps are connected directly to the classrooms, toilet facilities, and kitchen, providing convenient access to water for students and staff. The platform's design prioritizes both stability and user convenience, enhancing water distribution efficiency for all beneficiaries.

In addition, the borehole was connected to the newly constructed washroom facility, which features four standing showers two designated for girls and two for boys powered by a 2HP surface pump. Water connections were also extended to the newly installed handwashing basins, strategically placed at the four corners of the classroom blocks to enable students to wash their hands regularly throughout the school day. An additional handwashing basin was installed near the old toilet structure, further enhancing hygiene accessibility for all students. This comprehensive setup promotes regular handwashing, improving overall sanitation and health within the school.

The borehole at YFC was developed to optimize water yield and ensure efficient performance. This process involved flushing and cleaning the borehole to remove any debris or fine particles, ensuring the extraction of clean



and safe water. High-pressure water and air were used to thoroughly clean the borehole, preventing blockages and enhancing flow capacity.

Throughout the development stage, water flow and yield were closely monitored to confirm that the borehole would consistently produce sufficient water for the school's needs. This step was critical to guaranteeing the long-term sustainability and reliability of the water supply system

Construction activities were completed within the planned timeline, with all work finalized by 10th August 2024. The borehole and water system were then tested to ensure functionality and safety.

PUMP TEST, INSTALLATION, AND WATER QUALITY TEST: The pump installation at Youth For Change Educational Center involved fitting a 2Hp single-phase electric pump to efficiently draw water from the 100-meter-deep borehole. The pump was connected to a 1-inch pipe, ensuring optimal flow capacity.

Pump tests were conducted to evaluate performance, with the system pumping approximately 230 liters per minute (LPM). The tests confirmed that the borehole could sustainably provide up to 13,800 liters of water per hour, meeting the school and the community's water requirements within the designated pumping hours.

Water quality tests were carried out to ensure the safety of the water for consumption. The tests examined key parameters such as pH, turbidity, and the presence of any contaminants. About 99% results showed that the water met national water safety standards, making it safe for drinking and daily use by the students and staff and the community.

The borehole system was fully compliant with Ghana's water safety regulations, ensuring that it would provide clean and potable water for the school community.

SUPPLY OF CONSTRUCTION MATERIALS: A comprehensive list of construction materials was delivered on-site at Youth For Change Educational Center for the borehole project. These included:

- PVC pipes (1-inch) for water flow
- Concrete for the platform foundation
- Two 7,000-liter water storage tanks
- 15 tap fittings
- Electric pump (2Hp, single-phase)
- Surface Pump (2Hp, Double – Phase)
- Electrical Meter for the system
- Timer for system regulation
- Washroom constructional material supply
- Reinforcement bars and other structural components

All materials were thoroughly inspected upon delivery to ensure they met the project's technical specifications and quality standards. The pipes, tanks, and other components were of high durability, suitable for long-term use in a school environment. The quality of the materials adhered to both engineering and safety guidelines, ensuring the project's success and sustainability.



CONSTRUCTION WORKS: The construction activities at Youth For Change focused on setting up a robust and durable water system. Key tasks included:

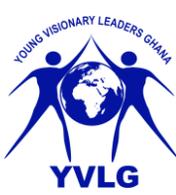
- **Tank Installation:** Two 7,000-liter water storage tanks were securely mounted on a reinforced tilled concrete platform. The platform was designed to ensure stability and long-term durability, with the tanks positioned to optimize water flow and distribution.
- **Tap Arrangement:** A total of 15 taps were installed to ensure efficient access to clean water for both the community and the school. Six taps were positioned at the front to serve the wider community, while another six taps were installed on the platform inside the school to provide clean water to students and staff. Additionally, three taps were strategically placed at the back of the classroom blocks, with two taps on each side of the platform, ensuring easy accessibility for students and staff. This tap arrangement was carefully designed to accommodate high usage and minimize wait times during peak hours for both community members and the school population.
- As part of the project, a 4-by-20-foot washroom facility was constructed to provide school children with a hygienic space for washing up after sports and other physical activities. The washroom was designed to accommodate both boys and girls, with two showers installed in each section. The interior was fully tiled to maintain cleanliness and promote hygiene.
- Additionally, six handwashing basins were strategically installed in key locations, including near the toilets and in front of the classrooms, to encourage regular handwashing among students and staff, reinforcing hygiene practices throughout the school.
- A dedicated washing sink was also provided for the school kitchen, enabling students and kitchen staff to clean bowls and utensils efficiently, further promoting cleanliness and sanitation within the school environment.
- **Final Touches:** The area around the borehole and tank platform including the newly constructed washroom was cleaned and leveled for safety and accessibility. Drainage systems were also put in place to manage any overflow and prevent waterlogging around the installation.

Challenges Encountered: During construction, minor delays occurred due to inconsistent weather conditions, which extended the concrete curing times. Furthermore, slight adjustments were necessary to optimize the initial tap placements for better accessibility to students and the community. These challenges were effectively addressed by modifying the work schedule to align with the weather conditions and revising the tap layout to enhance functionality. However, these adjustments required deviations from the original plans, which introduced additional elements not accounted for in the initial design.

Overall, the construction phase was completed successfully, with all systems functioning efficiently.

COMPLETION OF PROJECT: The construction of the borehole water project at Youth For Change Educational Center was officially completed on 10th August, 2024. Following the completion, a thorough final inspection of the entire water system was conducted to ensure that all components were functioning as expected.

During the inspection, the following aspects were evaluated:



- **System Functionality:** All components, including the pump, water storage tanks, taps, and plumbing, were tested to confirm they operated effectively. Water flow rates met the anticipated benchmarks, providing assurance of the system's performance.
- **Durability Assessment:** The materials used in construction were reviewed for durability. The concrete platform and tanks were confirmed to be robust and stable, suitable for long-term use in the school environment.
- **Safety Review:** A final safety check was conducted to ensure that the system adhered to all safety regulations and standards. This included confirming that all water quality parameters remained compliant with national water safety guidelines, ensuring that the water supplied to the school is safe for consumption.

The project was officially handed over to the school management, marking a significant milestone in providing reliable access to potable water for the school community.

TRAINING OF IN-CHARGE OFFICE OF THE PROJECT: Following the completion of the borehole water project and the washrooms and hygiene facilities in the school, a comprehensive training session was conducted for the school's assigned staff responsible for managing and maintaining the borehole system. The training aimed to equip them with essential skills and knowledge for effective operation and upkeep of the water supply system.

Key Skills Covered:

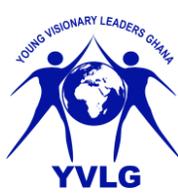
- **Pump Operation:** Participants were trained on the proper operation of the 2Hp single-phase pump, including starting, stopping, and adjusting settings to optimize water flow based on demand.
- **Routine Maintenance:** The training included guidance on performing regular maintenance tasks, such as checking and replacing filters, inspecting electrical connections, and ensuring that all components were functioning correctly.
- **Troubleshooting:** Staff were educated on identifying and resolving common issues that may arise, such as pump malfunctions or blockages in the plumbing system. This included practical demonstrations to enhance understanding.

INAUGURATION AND HANDING OVER CEREMONY: The inauguration and handing over ceremony for the project at YFC took place on 25th September, 2024. The event was held as a durbar ceremony, celebrating the successful completion of the project and its significance for the school and the community.

Participants: The ceremony was attended by a diverse group of stakeholders, including traditional leaders, members of the school community (students, teachers, and staff), local government officials, and representatives from the media. Their presence highlighted the importance of the project and its impact on the community.

Key Speeches Delivered:

- **YVLG Representatives:** A representative from Young Visionary Leaders Ghana (YVLG) delivered an inspiring speech, emphasizing the organization's commitment to improving access to water and promoting sustainable practices within educational institutions.



- **Partners:** Key partners involved in the project also shared their thoughts, discussing the collaborative effort that led to the successful completion of the borehole system and its anticipated benefits for the students.
- **School Representatives:** The headmistress of Kumasi Girls Senior High School expressed gratitude to all stakeholders for their support and outlined how the new water system would enhance the health and well-being of the students and staff.

Official Handover: The ceremony culminated in the official handover of the borehole system to the school management. This symbolic gesture marked the successful transition of responsibility for the water system to the school, ensuring that they would oversee its operation and maintenance for the benefit of the entire school and the community.

FINAL TOUR AND PROJECT COMMITTEE MEETING: Following the successful inauguration of the project, a final tour of the completed project site was conducted with key stakeholders. This tour allowed participants to see the operational water system firsthand and understand its impact on the school and the community.

Tour of the Completed Project Site: The stakeholders, including representatives from Young Visionary Leaders Ghana (YVLG), school management, local government officials, and community leaders, were guided through the installation site. During the tour, they observed the borehole, water storage tanks, and tap arrangements, with discussions highlighting the significance of the project in providing reliable access to potable water for over 2,300 community members, students and staff.

Final Meeting with the Project Committee: Following the tour, a meeting was held with the project committee to discuss the long-term monitoring and sustainability of the water system. Key topics included:

- **Monitoring Protocols:** The committee established protocols for regular monitoring of the water system to ensure it operates efficiently and continues to meet the community and school's needs.
- **Maintenance Responsibilities:** Clear responsibilities were outlined for the school management and assigned staff regarding the routine maintenance of the system, ensuring its longevity.

Agreed Upon Terms for Periodic Review and Follow-Up Visits: The meeting concluded with an agreement on terms for periodic reviews and follow-up visits. It was decided that YVLG would conduct visits every six months to assess the system's functionality, provide additional training if needed, and support the school in addressing any challenges that may arise.

DEPARTURE: The team from Young Visionary Leaders Ghana (YVLG) departed from YFC on 26th September, 2024. As the team concluded their visit, school authorities expressed their heartfelt appreciation for the successful implementation of the borehole water project.

Acknowledgement from School Authorities: The board chair and other key representatives from the YFC school formally acknowledged the dedication and effort put in by YVLG, LoveSpring and its partners throughout the project. They emphasized how the new water system and the wash facilities would significantly improve the health and well-being of the community members, students and staff, facilitating a better learning environment.



Expressions of Gratitude: During the farewell, the school authorities and the community extended their gratitude for the ongoing support and commitment to ensuring the sustainability of the water system. They also reiterated their willingness to collaborate with YVLG and partners for future initiatives that would benefit the school and the surrounding community.

SUBMISSION OF FINAL REPORT, CERTIFICATE OF APPRECIATION, AND PROJECT VIDEOS/PICTURES

As part of the project closure activities, the final project report for the project at YFC would be submitted to LoveSpring and other partners. This report provided a comprehensive overview of the project's implementation, highlighting key activities, outcomes, and lessons learned throughout the process.

Certificate of Appreciation: During the final meeting, a certificate of appreciation was presented to Young Visionary Leaders Ghana (YVLG) by the school authorities and the local community. This certificate recognized YVLG, LoveSpring and partners commitment and efforts in successfully executing the project, emphasizing the positive impact it has had on the school community.

CONCLUSION

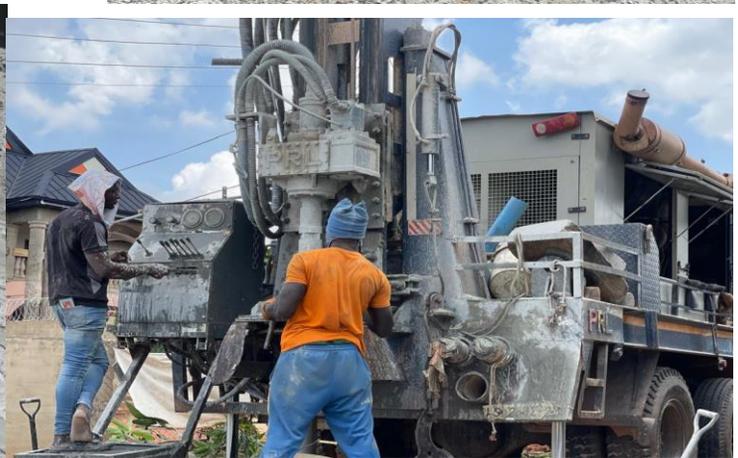
The project at Youth For Change has been successfully completed. YVLG and its partners remain committed to ensuring the long-term sustainability of the system through periodic monitoring and community engagement.



**PICTURES FROM THE CONSTRUCTIONAL WORK AND HANDING OVER OF THE YOUTH FOR CHANGE
EDUCATIONAL CENTER WASH PROJECT**



PICTURES OF THE YOUTH FOR CHANGE EDUCATIONAL CENTER PLATFORM CONSTRUCTION



DRILLING AND CONSTRUCTION OF THE YFC BOREHOLE



SUPPLY OF SOME CONSTRUCTION MATERIALS FOR THE YFC PROJECT



PICTURE OF THE COMPLETED WATER PROJECT FOR BOTH COMMUNITY AND THE SCHOOL



COMMISSIONING AND HANDING OVER CEREMONY OF THE WATER PROJECT

COMMISSIONING AND HANDING OVER CEREMONY OF THE WATER PROJECT





CITATIONS PRESENTED TO THE PARTNERS BY THE SCHOOL BOARD AND COMMUNITY LEADERS IN HONOR OF LOVESPRING, RUNGSTED GYMNASIUM AND YOUNG VISIONARY LEADERS GHANA



COMPLETE AND FURNISHED WASHROOM FOR THE YFC



PICTURES OF THE VARIOUS HANDWASHING FACILITIES INSTALLED IN THE YFC SCHOOL