

Rebuilding Baghdad: An Engineer Battalion's Contribution

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The 8th Engineer Battalion deployed to Baghdad for Operation Iraqi Freedom from March 2004 to March 2005. Although the unit performed a wide range of combat engineer and security tasks, its primary mission was to rebuild the infrastructure and restore essential services in the two districts covered by its brigade combat team (BCT). The reconstruction contributed to 1st Cavalry Division's objective of creating a stable and secure environment in Iraq. During its deployment, the battalion completed more than \$15 million in projects and turned over another \$35 million of ongoing work to the 3d Infantry Division.

Goals

Rebuild the Infrastructure

Focusing on sewer, water, electrical, and trash (SWET) projects, the battalion worked to restore essential services in its area of Baghdad. The existing systems had suffered from years of neglect and were seriously degraded or non-operational. Many neighborhoods were without functioning sewer systems, reliable electricity, clean drinking water, or trash collection services.

Empower Iraqis to Rebuild

The battalion quickly learned that Baghdad's engineers and officials knew the problems—and the solutions—but lacked the resources and organizational structure to fix them. The goal was to work with the Iraqis to rebuild their country—not impose American solutions to their problems. After all, the Iraqis would have to maintain the projects long after the battalion left the country.

Provide Work for Iraqis

An important part of creating stability was reducing unemployment. These infrastructure projects created numerous local employment opportunities, stimulated the economy, and reduced the ability of anti-Iraqi forces to recruit.

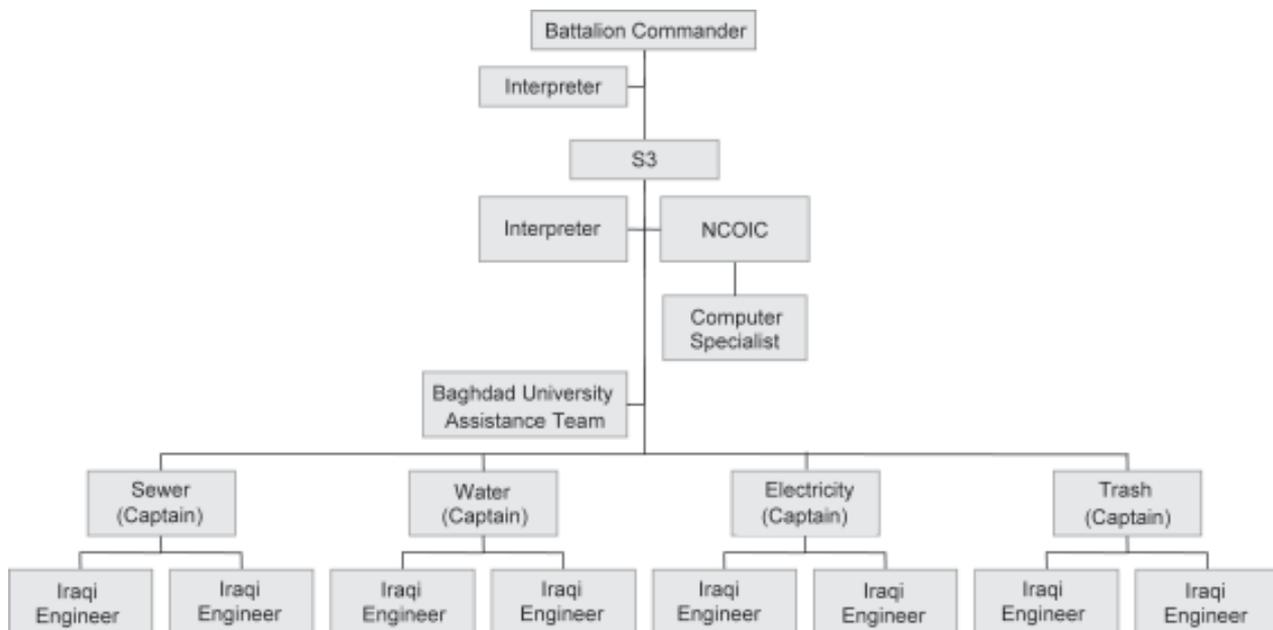
Show Immediate Progress

Since the rebuilding of Iraq's infrastructure would be a long endeavor, it was critical to demonstrate the battalion's plan and show its commitment to the task. As the project progressed, the Iraqi people were able to see their quality of life improving. This also built confidence in the interim Iraqi government and reduced support for the insurgency among the general populace.



Iraqi contractors construct a new high-tension line in Baghdad.

Infrastructure Coordination Element Organization



Organization

The battalion established an infrastructure coordination element (ICE) (see the figure above) from within its S3 section that was composed of four engineer captains (each responsible for one SWET focus area), a non-commissioned officer in charge (NCOIC), and a computer operations specialist. The battalion also employed a staff of ten local Iraqi engineers and interpreters. The battalion commander and his personal security detachment conducted most of the coordination with city and district leaders. Baghdad has an organized system of public works. Each of the nine city districts has a public works director general who has sewer, water, and solid waste superintendents and a staff. In addition, there are established departments at Amanat Baghdad (city government) for SWET. Although most of these departments are staffed with capable engineers and staff, sometimes they are not able to make significant progress on their own.

Contributions

The battalion's biggest contribution was its mission focus and project management skills. The ICE officers fully embraced the reconstruction mission and worked with Iraqi engineers and local leaders to establish priorities and organize efforts. The battalion leadership, drive, and project management skills proved invaluable throughout its tenure in Baghdad. The battalion was able to access all levels of the ministry and city government directly with the help of the 1st Cavalry Division's Governance Support Team.

The battalion played a critical role in securing funds required to start reconstruction. Amanat Baghdad did not have the resources to conduct routine maintenance and repairs, let alone start large improvement projects. Although the interim Iraqi government received funds from international donors, the funds were not available at local levels. The battalion was able to obtain the necessary funding from a variety of sources, including the Commander's Emergency Relief Program, appropriated funds, and donated international funds. While money was available to perform this critical work, time and effort were required to communicate the needs and commit the funds.

The battalion worked to ensure that projects were not based on political or personal gain. It targeted projects for the parts of Baghdad that posed the biggest security challenges. Not surprisingly, these areas had some of the worst services, and the residents lived in substandard conditions. As a result, a greater percentage of funds was applied directly to actual construction.

Project Management

Development

Because the battalion's focus was on SWET, most projects were identified by district and city engineers. The battalion commander interfaced directly with the district councils in weekly meetings and received input on the required work and priority areas. Landowning task forces worked with neighborhood councils on non-SWET projects such as school and hospital renovations. Iraqi engineers at the city and

A new sewer main line in southern Baghdad improves the Iraqi quality of life.



ministry completed designs and plans, thus ensuring continuity, synchronization, and adherence to Iraqi standards and specifications. The battalion's BCT deliberately focused resources on the areas where the insurgency was most active. The commander's intent was to bring kinetic and nonkinetic operations to the enemy simultaneously, in order to defeat anti-Iraqi forces and eliminate enemy support from the local population.

Contractor Selection

Reconstruction projects were completed by Iraqi contractors who employed Iraqi workers. The ICE held regular bidding conferences to announce and distribute bid packages for upcoming work. The battalion found that simple and standardized packets, in both Arabic and English, were essential to solicit clear and accurate bid proposals. Contractors also appreciated the use of compact disks and e-mail, which helped them increase their computer skills. After receiving the bids, the battalion formed selection committees to choose the best contractor for the job. The committees consisted of a city engineer, a district engineer, a local council member, and officers from the corresponding task force and the battalion. Selections were based on the contractor's previous experience and his local labor and security plans—not just the lowest bidder. Since many of the projects were located in dangerous parts of the city, the contractor's security plan and commitment to use local labor were often the difference between success and failure.

Quality Control

Quality control was an Iraqi responsibility. This was normally accomplished by a team responsible for day-to-day

project oversight. The team consisted of engineers appointed by Amanat Baghdad and district and Iraqi engineers. The battalion and the director generals were responsible for quality assurance. A team of engineers from Baghdad University also conducted quality assurance inspections. In some areas, project visits were not always possible due to security concerns. Since most of the contractors worked under the pretext of Amanat Baghdad, regular site visits would have jeopardized their safety. Reports from the contractors and the quality control teams were submitted at weekly project coordination meetings. These meetings were invaluable in coordinating for local labor and security and interfacing with neighborhood residents.

Visibility

The battalion ensured that the local populace was informed about the ongoing reconstruction in their neighborhood. The battalion Public Affairs Officer coordinated for media coverage, which ranged from local to international media. Regular coverage included contract-signing, groundbreaking, and ribbon-cutting ceremonies. District and neighborhood council members, along with Amanat Baghdad and district engineers, were encouraged to attend these events and interface with the media. Although the ceremonies were occasionally bumped, there was very positive media coverage in Iraqi newspapers, television, and radio.

The battalion also presented regular project status reports at the weekly district council meetings. This kept council members informed, helped develop local ownership of ongoing construction, and furthered the goal of getting the word out to the people about the reconstruction.

Lessons Learned

- Involve stakeholders in the entire project process. Iraqis want to rebuild their country, and giving them ownership—from project identification to contractor selection to construction oversight—further the goal of creating stability and security.
- Work reconstruction operations simultaneously with combat operations. Applying both kinetic and nonkinetic operations improved both security and quality of life in two of the worst neighborhoods.
- Ensure that project designs are synchronized with the city plans. In most cases, the Amanat Baghdad prepared the SWET designs; however, in some cases the contractor completed the design and received city approval before execution.
- Bureaucracy with local government and ministries is unavoidable, but including them in the beginning helped gain their support. Government officials can help or hinder—depending on how and when they are included—so identify the “power brokers” early.
- The ministries and Amanat Baghdad have capable engineers, but it is important to check the designs and bills of material before putting a contract out for bid. Specifically, review the scopes of work and define contractor and city responsibilities.

Sheikh Maruf Project

One of the most difficult neighborhoods was Sheikh Maruf—located about two miles north of the International Zone and plagued by gangs, criminals, and terrorists. Haifa Street, the main road through the area, was the scene of numerous attacks and assassinations. Sheikh Maruf contained approximately 250,000 people. The citizens were extremely poor, often living in buildings that should have been condemned. The area, known as the “Old City,” was built in the early 1900s.

The battalion learned of the poor living conditions during its first visit to Sheikh Maruf. Escorted by a local sheikh, the unit trudged through ankle-deep sewage that flooded entire neighborhoods. Since there was no sewer system in place, household sewage flowed down the middle of the street. The battalion decided that this area needed its attention right away, so it requested designs and bills of material from the Amanat Sewer Department and began fighting for funds for the project.

The battalion secured more than \$11 million from donated and appropriated funds to execute new sewer collection networks for the four worst neighborhoods in the Sheikh Maruf area. As part of the new sewer construction, the battalion also

rehabilitated the major sewer lift station. Committees selected contractors who were willing and able to complete the work, using the maximum number of local workers.

Because of the frequent attacks in the area, the battalion’s ability to visit the area was limited. A quality control team composed of Amanat Baghdad and battalion-hired Iraqi engineers handled the oversight of day-to-day operations. The battalion conducted weekly progress meetings, which helped identify and solve problems. Neighborhood representatives were invaluable to contractor security, local labor coordination, and communication with the other residents.

Construction began in early August 2004 and was completed at the end of March 2005. The Iraqi contractors worked through numerous raids and other combat operations that were conducted in the area. In total, these projects employed more than 1,000 Iraqis, most of them from the very same neighborhoods. The residents realized several benefits: improved services, greater employment opportunities, and improved security.

Conclusion

The 8th Engineer Battalion’s reconstruction efforts restored essential services to more than a million people in two districts of the city. The battalion saw Iraqis take ownership of the rebuilding process, which will pay dividends in the years to come. Showing immediate and visible progress garnered the support of the new government and encouraged patience among the people as major infrastructure work continues. Thousands of Iraqis contributed to the economy, also reducing the insurgency base of support. Although much work remains, reconstruction and restoration of essential services are well on their way. 

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