



## Building in Remote Locations: Key Insights from MBP's Pacific Operations

By Ian Lange, PE

Building in remote locations comes with a unique set of challenges, from complex logistics to language barriers to unpredictable weather. MBP is often called to these demanding environments, where our work is tested by nature, culture, and operational complexities. We recently sat down with Ian Lange, PE, who oversees MBP's operations in the Pacific, to gather his insights on overcoming challenges and achieving success in remote locations.

### Q.

**IN YOUR OPINION, WHAT ARE SOME OF THE CRITICAL LOGISTICAL CONSIDERATIONS WHEN PLANNING CONSTRUCTION PROJECTS IN REMOTE AREAS?**

Logistics is the most critical element for a remote project. You need to have most everything fully planned out and locked down well in advance of mobilizing to the site. Your labor source should be your first consideration. Is the labor force locally available or will it need to be brought in? On a very remote site, will the laborers be able to access the site themselves or will buses, ferries, helicopters, or planes be required? Where will the labor need to be housed and will a camp need to be established? If housing the labor force is required, you will have to plan for other significant support including dormitory accommodations, dining facilities, laundry, showers, restrooms, power, connectivity, and other domestic facilities.

The best approach to planning is to start with the most expansive and comprehensive list of requirements (assuming nothing is available) and work backward. Check the requirements off your list one by one as they are satisfied. It is also critically important to establish early partnerships with local community leaders and businesses to assist in overcoming logistical issues. Reaching out to local officials, landowners, commercial importers, industrial shops, and other industry leaders early on will be to your benefit.

Q.

**FINDING SKILLED LABOR IN REMOTE AREAS CAN BE DIFFICULT. HOW DO YOU ASSESS SKILLED WORKERS' AVAILABILITY IN THESE REGIONS?**

Determining the availability of skilled labor in a remote region is difficult. It is critical that you understand what labor resources are locally available by reviewing recent labor market surveys, collaborating with local governments, and determining the timing of other regional construction projects utilizing the available skilled labor. If your company does not have a local presence, you may likely be required to use an employer of record (EOR). This is a fairly common practice and the EOR will find and employ the workers for you, who will, in turn, perform the work on your project. While this arrangement has its pros and cons, it is a good way to identify the necessary skilled workforce.

Another option might be to identify and directly contract with key individuals as local labor laws allow. This may be the preferable manner to fill the more critical management positions. Another viable option in areas closely aligned with the U.S. is the use of the H2B visa program. This visa allows you to bring in foreign national employees for one year, which can be extended to up to three years, and upon the end of the visa, the employee returns home. The key to success is to understand the labor market early on.

Q.

**LANGUAGE BARRIERS CAN POSE CHALLENGES FOR EFFECTIVE COMMUNICATION WITH LOCAL WORKERS AND PROJECT STAKEHOLDERS. HOW DO YOU ADDRESS LANGUAGE DIFFERENCES TO ENSURE CLEAR COMMUNICATION AND MINIMIZE MISUNDERSTANDINGS?**

Effective communication is a significant concern on remote jobsites. Much of the workforce will likely be international and speak limited English. You will often find at the conclusion of meetings the assumption is that everyone is on the same page, only to discover shortly thereafter that is not the case. There are several ways to mitigate language barriers, including targeting fluent bilingual project employees as part of your management team. They can bridge the communication barrier and advise the team on cultural gaps that may arise. This person would listen to the "chatter" and help align the team during meetings and while in the field.

Written follow-up is also key to ensure effective communication. Sketches, marked-up drawings, and memos are more clearly understood over verbal communication. Strive to meet in person as much as possible to enhance your confidence that the message is clearly received. Video conferencing works well if an in-person meeting is not possible, but meeting face-to-face to read the room is preferable.

Q.

**LEAD TIMES FOR MATERIAL AND EQUIPMENT DELIVERY CAN BE MUCH LONGER IN REMOTE LOCATIONS. HOW DO YOU PLAN AND COORDINATE THIS TO ENSURE TIMELY DELIVERY AND MINIMIZE PROJECT DELAYS?**

Lead times can depend on how remote or austere the project site is. Assuming early planning may not include a site visit, internet research and reaching out to local vendors is a must. If the work is on an island, you can also assume that most materials will need to be barged in, including the initial cranes, lifts, and all weight-handling equipment required to offload the barge. Compounding the long lead time concern is if the contract requires that materials and equipment be produced in the U.S. This could add months to the delivery and increase contract costs considerably.

Loss of materials en route, whether by misplacement, theft, or falling overboard in foul weather, can be a reality. Overbudgeting on low-cost/pilferable items, within reason, should be considered. One should plan for at least an initial 4-6 month lead time for any project requiring materials from the United States west coast to anywhere remote in the Pacific Ocean.

## **Q. QUALITY EXPECTATIONS MAY VARY BETWEEN DIFFERENT REGIONS AND CULTURES. HOW DO YOU ENSURE CONSISTENT QUALITY STANDARDS ARE MET IN REMOTE LOCATIONS AND MAINTAIN CLIENT SATISFACTION?**

Delivery of a quality product consistent with U.S. or western standards is challenging on most remote projects. Quality standards need to be established early on in each phase of work, but prior to that design, product selection, and ensuring the delivery of approved materials is critical to a successful quality management program. If the materials must be US-produced, this will help ensure in general higher quality of products are being used, but it will certainly add time and money to the project. If products need not be produced in the US, the designer of record should be particularly careful about what is specified and how liberal they will be on product substitutions. Specifications must be written in consultation with the owner as selections will create considerable swings in pricing.

QA/QC personnel should also be thoroughly versed in the type of work being contemplated. Ensure there is enough coverage to oversee production and that key elements of work are formally inspected and documented. Another quality consideration must be material and equipment storage. Remote locations will inevitably see building materials sit on site for many weeks or months before use. Drywall, ductwork, rebar, steel, pumps, motors, HVAC equipment, transformers, and almost all other building materials are susceptible to weather-related deterioration (corrosion, mold, saturation). While this concern is universal to all projects, it is compounded in remote locations due to the poor quality of the storage facilities available, if any, and the exposure to the elements. Routine rain showers, corrosive salty climates, and hurricane-force winds can compromise most building materials if they sit too long, and all of this leads to the potential of installing defective materials.

## **Q. ARE THERE ANY OTHER ITEMS THAT YOU CAN THINK OF THAT ARE WORTHY TO NOTE WHEN DOING WORK ON REMOTE PROJECTS?**

In remote locations, the simplest of issues that arise on all construction projects will surely be compounded and much more impactful if not anticipated ahead of time:

- **Weather** – while weather is a significant consideration on all projects, it is complicated in the remote regions of the Pacific by hurricanes, typhoons, and commonplace tropical storms. The rainy season is typically longer than most, and tropical storms can dump inches of rain in hours. Clayey soils are common on islands which combined with significant rain create sloppy work conditions for days. Understand the cyclical weather patterns and build the construction schedule with the appropriate float to ensure you can absorb the expected delays due to weather.
- **Time Zones** – time zone differentials add another challenge. Be creative and try to leverage them to your advantage. Create a core working hours window between the job site location and the necessary reach-back support in the U.S. or wherever it may be located. Come to an understanding with your reach back team (designer, corporate office, owner) that RFIs or other questions you might have if sent by your close of business, should be addressed during their next business day. This will ensure you wake up to your answer the next morning ensuring zero impact on execution.



## CAN YOU SHARE ANY INNOVATIVE TECHNOLOGIES FOR STRATEGIES YOU HAVE USED TO OVERCOME THE LIMITATIONS OF REMOTE CONSTRUCTION SITES?

There are many technologies in the industry today that assist in overcoming the obstacles associated with remote construction sites. However, they may be limited by bandwidth and other connectivity-related factors common to remote locations. A company must also be confident when contemplating new technology that it is not too advanced for the on-site team to make the return on investment worthwhile. Rolling out a technology that the intended users have never worked with before and expecting them to fully understand the system with just a superficial training session would likely not be a useful expenditure of resources. Some more traditional strategies that should be considered include:

- Early Contractor Involvement (ECI) or Progressive Design Build delivery methods that integrate constructor feedback into the design and early stages of the project will pay dividends when it comes to material selection, sourcing, logistics, familiarity with the region, and many other areas.
- Early site visits by key project team members to understand the challenges and opportunities available on or near the site are critical. Part of the mission of these trips would be to pave the way for partnerships needed with the local community ahead of the project, which is critical to success. Vehicles, equipment, and building materials may be made available by the local community if they feel a bond with the project team.
- Community outreach will be well received. In the past, I have seen or heard of project teams tutoring children, opening mechanic shops to the local community to assist with working on their vehicles, providing apprentice training in the trades, sponsoring community projects at schools, and other outreach programs that largely only cost volunteer time will pay dividends.
- Wi-Fi and Internet Connectivity. This can be a significant problem in remote locations where power and internet services are routinely interrupted. Contingency communication plans should be developed to mitigate impacts to the project. About a year ago, the entire country of Palau was without internet service for an entire week due to an urgent repair of the undersea cable feeding the island nation. While it was announced in advance, written communications to and from the project site were completely cut off for the week. Investing in a satellite system such as Starlink can be a prudent investment to provide uninterrupted communication.
- Leveraging proven technology to enable long-distance support. Items such as drone site videos and 360-degree progress photos can be easily shared with others off-site. The use of BIM can also enhance real-time collaboration and mitigation of conflicts during design, construction, and ultimately maintenance/use of the new facility.

Working in remote locations requires a mix of practical thinking, innovation, and strong community connections. Each project has its unique challenges, but a combination of careful planning and nimbleness are important components—from ensuring materials arrive on time to meeting quality standards to dealing with site security issues. A team's experience and local knowledge make a big difference, helping to make the most of limited resources and to tackle the unique issues of remote sites.

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