# Dar Al Riyadh Insight #45
# Logistics – Site Based Logistics; Waste Management

***Dar Al Riyadh Insights reflect the knowledge and experience of our Board, executives and staff in leading and providing PMC, design and construction management services. Dar Al Riyadh believes in the importance of broadly sharing knowledge with our clients and staff to improve project outcomes for the benefit of the Kingdom of Saudi Arabia.***

**Site-based logistics** management may include various activities, including storage and dispatch of bulk materials and handling of material, equipment, and tool flows from warehouses and laydown areas to various construction work fronts and crews. Measurement, logging, and tracking of these flows are important for quality, safety, and inventory management. Site-based logistics management also requires provision, maintenance, and fueling of on-site vehicles as well as management and maintenance of logistics-related plant equipment and tools. Worth noting are the huge energy requirements, both fuel and electrical, of construction sites. Large projects, especially those in more remote environments, require special attention to fuel movements (truck or pipeline) and on-site storage (how many days of fuel). Similarly, large projects with multiple diesel generators may benefit from the fuel savings that come through use of a microgrid sharing this distributed resource. Increased focus on carbon may influence fleet composition and sources of energy for construction.

Water and wastewater flows along the logistics chain often do not receive adequate logistics attention. Some sites may require potable water to be trucked in and in some instances non-potable water may be needed for dust suppression. Depending on the particular circumstance, the logistics of water may prove to be especially challenging.

**Waste management** is another important link along the logistics chain. Up to 25 percent of materials arriving at a site leave the site as waste. Logistics management has a key role in influencing designs that minimize waste materials (temporary steel, for example). Additionally, waste stream flows can add to congestion in an already constrained logistics chain. Increasing environmental, social, and governance (ESG) considerations, especially around net zero carbon (achieving carbon neutrality or net-zero carbon dioxide emissions), can be well served by attention in waste management.

**Additional Considerations**

Traditionally, a “construction site” is defined as that location where a final delivered facility is being built. While still true today, the definition must be broadened to reflect changes in the construction process. Now a site also includes off-site fabrication and preassembly facilities as well as module yards.

Recognition of the multiplicity of intermediate and final sites is important as they further complicate overall logistics management. What materials must be delivered where and when? Consider a situation where a

degree of preassembly is to happen off-site, but because of supply delays, the assembly must now occur at the final site location. The entire logistics chain around this activity and item of supply must change.