

## **Sustainable Building**

Procuring a more sustainable building for your project is increasingly becoming the norm in the design and construction industry. When designing and planning for a sustainable product, the immediate thought is to reduce and conserve the amount of energy consumed in the building. However, there are additional processes to keep in mind before the building is even turned over to the owner. The selection of the construction material, the building process, and the long term approach to energy usage of the construction site.

One of the major issues challenging the sustainability of a building is its ability to eliminate air leakage. If a designer and builder can minimize air leakage within a building the end result will be lower operating costs, reduced equipment cost, as well as a reduction in carbon emissions. During independent tests for air permeability, it has been recorded that off-site modular buildings can operate up to 70 percent better than site built buildings. Due to their controlled building environment modular buildings can attain a higher degree of accuracy, which leads to their superior thermal efficiency, reduced operating costs, and lower carbon emissions.

Modular buildings are factory-built to quality controlled specifications and utilizing a highly skilled workforce. Due to the controlled environment of the modular building process, research has shown that the energy required during the building process can be up to 67 percent less than a comparable on site building process. Modular Solutions, Ltd. has become an industry leader in the modular building market by ensuring that all of our buildings are designed and built with the end goal of energy efficiency and reduced operating cost to the owner.

The concept of sustainability goes beyond the energy usage of a building or the energy required for constructing a building. A project must also efficiently reduce the amount of material waste created during the construction process. Material waste can be thought of in three parts: disposed material, reused material and recycled material. In the controlled environment of a modular factory waste can be reduced by up to 90 percent as oppose to traditional construction. In the modular building environment the latter two parts of material waste are much easier to control. Smart modular designs can take advantage of the use of standard material sizes, which will reduce the amount of cutting to fit. Material that is cut during the modular building process (door and window paneling) can be either reused in another part of the module, or recycled. Steel beams and wall studs can be precisely cut for each modular project, which can eliminate the need to dispose of material that was improperly ordered or purchased. A factory environment makes it easier to segregate waste and provide recycling stations, as opposed to the use of open top dumpsters that clutter traditional construction sites.

Another factor in material waste is material damages, which can occur from natural or human sources. A controlled modular building environment will eliminate the natural source of material damage and waste be keeping the material within a climate and

temperature controlled setting. Drywall and paneling are extremely susceptible to moisture, and in an on-site building project there is no permanent protected location for material to be staged or stored. However, the modular building factory not only provides an enclosed storage area, but also allows the workers to work in a climate controlled setting. This controlled setting protects the workers from seasonal changes by allowing them to work year round comfortably, which will ultimately result in a better quality product.

Modular Solutions, Ltd. is committed to producing a high quality product for its clients, while at the same time ensuring that they are reducing its impact on the environment and natural resources. Through material selection, installation, and quality controls Modular Solutions, Ltd. has provided modular buildings (permanent and temporary), modular offices, and construction trailers with the goal of sustainability for future generations.

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