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Cold Weather Shouldn't Freeze Construction Projects

BY BOB KEELEY

We've all heard the old adage about New England weather: if you don't like it, wait five minutes and it'll change. Unfortunately, between the months of November and March, it rarely changes for the better.



This is bad news for construction companies trying to complete projects during that time of year. It used to be that construction projects took a break during these months, but that's not the case anymore. When three or four months delay in opening a new building can mean millions in unrealized revenue, developers are more than willing to spend extra dollars to

get that building finished as soon as possible. The extra costs are spent not only on heating and protection from the elements, but also for additional man-hours. Shorter daylight hours and slower progress significantly impede the development process during winter months.

The incremental additional costs typically go down as the size of the project increases, therefore the additional expenses become a smaller percentage of the overall project cost. Smaller projects, which can be largely completed in a six to

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eight month time frame, are more often put off until warmer weather arrives.

Precautions

Winter conditions affect every aspect of these projects. Consequently, precautions and remedies can and should be made at every step in the development process, beginning with the design of the building. Steel-frame buildings have an inherent advantage over other types of buildings. Structural steel can be erected under most weather conditions, save for the most extreme and severe. Once the framework is built, enclosures can be attached to it, allowing completion of other stages.

Reinforced concrete buildings are more difficult to build under winter conditions. Concrete must be well protected during the pouring and curing process. Heaters are essential to ensure proper curing temperature and to prevent freezing. Any repeated freezing and thawing will considerably weaken the structural integrity of the concrete.

Regardless of the building's designs, heating precautions such as blankets, hay bales and systems that run hot water through a flexible tubing system to maintain suitable soil temperatures, are essential when working on a building's foundation. Soil temperature is important not only for putting in the foundation, but also for returning backfill. If the soil has a high moisture content, every precaution must be taken to avoid freezing. The good news is, ground water levels tend to be lower during the winter, resulting in dryer soil conditions. Still, insulation is frequently left on the foundation forms to protect against crystallization, which can weaken the foundation.

Excavating frozen earth for the foun-

dition is a mixed proposition at best. If the ground is frozen, the process instantly slows down and becomes more expensive. Ground frost rarely goes more than a foot or so deep, but that is usually enough to present difficulties. On the plus side, frozen ground surrounding the excavation site provides more solid footing for construction equipment than the moist, soft soil of spring or fall.

The type of soil being removed also affects the excavation process. Dense, clay-packed soil has a much higher moisture content and is more prone to freezing than sandy or gravelly soil. Soil samples taken beforehand are very important to this process, because once construction begins on a project, any delays or disruptions become very costly to the developer.

The ultimate success of any construction project depends on the manpower going into it. Winter projects are no different. In addition to the protection and preparation of the building and equipment, you must also attend to the people working on the site. With increased risk of sickness and exposure to the elements, more time must be allotted to the project to compensate for shorter working hours and more days off.

It is a reality of business today that winter construction is unavoidable. Where once the belief was held that the resulting buildings were too costly and of inferior quality, we now see case after case of superior wintertime developments brought in on time and under budget. Winter construction can be a daunting challenge, but when builders and developers take the time and effort to address that challenge, the result is a high quality building that needn't wait several additional months to open. ■

