



Decision Support for Weather dependent Activities at Outdoor Construction Sites.

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Outdoor activities such as building and construction projects are often sensitive to the daily weather conditions. This could be that the casting of concrete would need a period of several hours without precipitation and temperatures above some minimum level so that the concrete can set properly, or it could be a necessary minimum temperature and a certain maximum moisture level over a certain period of time for paint to dry up correctly. If the criteria are not fulfilled during the necessary time period the final result may not reach the required quality or one may even have to start all over again. Also cranes and scaffolds at the construction site may need to be protected against high wind speed levels provided that there is a risk that high wind speeds occur during the time they are at use.

If the worst scenarios of these examples are realized, such as heavy precipitation, low temperatures or high wind speeds, substantial damage may be the result, leaving the project with both economical problems and difficulties in keeping up to the time schedule and probably several other problems.

It is thus important for the contractors and work supervisors to have the necessary information of how the weather parameters will develop during the time period needed to reach a successful result with the required quality.

At present contractors and work supervisors probably have to rely on the daily weather forecast, which perhaps is available only through the media. Even local weather forecasts normally cover a large region with a poor resolution in time and certainly not suitable for a specific analysis of certain criteria fulfilled locally over a period of time.

The Danish Meteorological Institute has developed an efficient planning tool, called “EntreprenoerVejr” in Danish, tailored to provide simple and easy to understand information on the kind of questions important for the planning of such activities. All that is required is a standard PC, normally available nowadays at every construction site, and a subscription to the EntreprenoerVejr. EntreprenoerVejr has an easy to understand graphical interface where the necessary information about location and criteria are typed in. The result is displayed as green and red, one for every hour on a time line 54 hours ahead. Green indicates that the criteria are fulfilled from this hour and the required period ahead, that is, work starting this hour can be finished with the required weather conditions throughout the work period. Red indicates that work starting this hour the weather will not experience all specified requirements fulfilled during the whole work period.

With this tool the contractor, once having specified the required weather conditions, gets an easy to understand and instant information on when to start working without needing to know or interpret the actual weather forecast.