

Close-In Blasting At Cornell

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ABSTRACT

This project involved the construction of a new 4-story library on the campus of Cornell University in Ithaca, New York. The new building was constructed completely below grade, adjoining several of the oldest buildings on the campus. Excepting some surface soil, the job was 100% rock and the excavation had to be completed within a 3-month window.

The foundations of the old buildings were contiguous to the new site and blasting came within one foot of the face walls. Part of the excavation extended under one of the buildings for construction of an elevator entrance.

The rock excavation was as deep as 30 feet and was blasted in a single lift. This required multiple decking of the blast holes and careful attention to delay patterns. Pre-splitting was required on the walls that were adjacent to the buildings. Vibration limits were carefully monitored with three or more seismographs for each blast. After the initial blasts, a requirement for blasting mats was cancelled.