

Client:

American Village Builders

Project:

American Village Builders needed to separate, demolish and remove five existing concrete decks and balconies from a building at Borgess Hospital in Kalamazoo, Michigan. The location of the deck and balconies—within a limited-access, enclosed courtyard—created accessibility and potential safety problems. Each of the decks, measuring 16 x 8 feet, had to be demolished without damaging the building to which they were attached. The top deck stood on a fifth floor, with subsequent decks on lower floors. The balcony structure was supported by two, 16” concrete columns, each measuring 57 feet high.

Plan:

Because of the need to demolish the decks without damaging the building, plus the situation created by the height and inaccessibility of the demolition area, a plan was created using Diamond’s remote controlled Robotic Demolition System. The plan also allowed for strict adherence to OSHA codes.

Process:

To carry out the plan Diamond mobilized a compact, remote controlled, Brokk 90 Robotic Demolition Mini Excavator, a BobCat MT55 Series loader, and a forklift to the demolition site. Once there, Diamond erected scaffolding on the east and west side of the balconies in order to provide physical access to the top of Deck #5 and all other levels. Tarps were placed on the sides of the scaffolding to prevent fly-off debris.

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To provide access to its crushing attachments, the Brokk, guided by remote control, maneuvered through hospital corridors. Next, it climbed up a series of stairs to deck #4, from where it worked upward to demolish deck #5 and supporting columns. It then maneuvered down to deck #3 in order to demolish deck #4. The process was repeated until the project was completed. After all the decks and columns were crushed and the material pushed to the ground, the debris was carted through the courtyard via BobCat and placed in steel hoppers. Using extreme care to ensure cleanliness and the safety of staff and patients, the loaded hoppers were pushed by hand through Hospital corridors to the point of egress, where they were transferred to a forklift and emptied in a dumpster for recycling.

Outcomes:

“This was a difficult job because of the lack of accessibility to normal concrete sawing equipment,” said Ryan Leaser, Project Manager for American Village Builders, a General Contracting company. “In addition, we needed to bring these balconies down while protecting the building structure from any structural damage. Diamond came in, looked at the situation, and developed and carried out a plan that worked.” According to Leaser, Diamond brought not only professional know-how but professional people to the job. “Their people knew what needed to be done and did it, within the plan specs. They also did it within the time that we had scheduled.”

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