

CASE STUDY / ENERGY RECOVERY CENTER SCALE HOUSE

WASTE-TO-ENERGY PROJECT GETS A RAPID REFRESH

After three decades of operation, an energy recovery center converting garbage into electricity needed an upgrade. In order to minimize disruptions to waste management operations, the scale house facility — the hub for weighing waste — was replaced on an aggressive timeline.



TIGHT COORDINATION HELPS TEAM MEET AGGRESSIVE TIMELINE

With an integrated schedule, advanced planning and frequent team communications, a new scale house for the Hennepin Energy Recovery Center was installed within a two-week planned facility outage.

PROJECT STATS

CLIENT

Hennepin Energy Recovery Center

LOCATION

Minneapolis, Minnesota

TOTAL PROJECT COST

\$200,000

COMPLETION DATE

April 2019

1K

TONS OF GARBAGE PROCESSED PER DAY

150+

TRUCKS TIP AT THE FACILITY PER DAY

CHALLENGE

Nearly 200 garbage trucks enter the Hennepin Energy Recovery Center (HERC) in Minneapolis, Minnesota, each day to deliver solid waste collected from local residents and businesses. When a truck enters and leaves the site, it is weighed on a large scale to determine the tipping fee based on the weight of the solid waste left behind. This waste is burned in boilers lined with water-filled tubes that produce steam, which then turns turbines to produce enough electricity to power 25,000 homes and provide heating and cooling to the downtown Minneapolis district energy system.

After more than three decades in operation, the aging HERC scale house was nearing the end of its useful life. Without a functioning scale house, a waste management facility would come to a standstill. The project called for a team to design a replacement and to oversee its installation during a planned two-week outage — an aggressive timeline given the unique components of such work.

While the design for the new scale house met the client's needs, it also would pose challenges for any construction crew. Working together, the design and construction teams addressed multiple factors when

developing the conceptual design, construction and schedule for the new facility.

The new scale house needed to be compact, yet it still required HVAC, electrical, plumbing, networking and other technologies and services used in larger buildings. The new HERC building — measuring just 12 feet by 24 feet — allows one or, at most, two operators to transition quickly between inbound and outbound trucks passing over the scales. In order to efficiently complete construction of such a compact building, the schedule needed to accommodate a lean construction team, as only three construction workers could work inside the building at a time.

The new building required other unique design features. It has windows and television monitors located at nonstandard heights and positions that optimize the visibility of trucks passing through. The new scale house also required additional building permit approvals because the facility needed to be slightly larger than the one it would be replacing. The wheelchair ramp length necessary for Americans with Disabilities Act (ADA) compliance exceeded the space available, so variances were needed before work could begin.



SOLUTION

Designing and planning for the new scale house began six months before the outage was scheduled to begin. Working with the general contractor and its subcontractors, we plotted a work plan for phased construction so that the replacement scale house would be constructed and ready for service in time for the planned outage. Ongoing meetings and frequent communications prior to and during the project preparation aided the team in receiving owner and permitting approvals two months prior to construction. Multiple preconstruction meetings were conducted with subcontractors to help confirm everyone was prepared to execute the detailed plans on schedule.

The team also constructed the basic new structure at an off-site location to later transport to the HERC. Traffic, parking and other logistical

considerations helped to guide decision-making on transportation as well as identification of building components to be prefabricated.

To complete the foundations by the end of the first week, the team demolished the existing scale house in the first two days of the outage and then poured fast-setting concrete for



Our new scale house project was a success from inception to completion. We could not have achieved this by working with existing modular shelters available on the market.

STEVE CHUBA

*FACILITY MANAGER,
GRE HERC SERVICES LLC*

the new building's footings. As the second week began, the new framed building was hoisted into place with a crane. In one day, the building was set into place by carefully aligning and welding its metal frame to preset metal anchors in the footings. And finally, with five working days left, the team set the windows, fastened the drywall and completed the interior finishes.

RESULTS

With a tightly coordinated outage schedule, the new scale house was completed within the two-week planned outage, without causing any disruptions to other renovation and maintenance activities at the site. The new scale house contributes to Hennepin County's zero waste goal by allowing the HERC to continue waste-to-energy processes, resulting in a 90% reduction of waste volume.



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