



Rising from the flood

A terminal project in St Louis is a marker of plans for this city's waterfront and of the vital link barge traffic provides in the region's supply chain, **Scott Berman** reports

A dredging and construction project is under way at the key 11ha Municipal River Terminal (MRT) on the Mississippi at St Louis. The bulk facility handles grain, salt, scrap metal, coal, product cargoes and more, is owned by the city and is leased by Beelman, a dry bulk trucking company.

Two sections of MRT's wharf, South Dock and a middle section, are being reconstructed and rehabilitated, rejoining them with the site's North Dock.

It's a design-and-build project by St Louis Development Corp (SLDC) and St Louis Port Authority that's being led by St Louis Bridge Construction Co, ABS Consulting and Halcrow Group. City engineers are also providing services. The cost is \$19.5M, of which \$15.6M will come from a federal grant. Construction started this year and is slated for completion about May 2013.

Background

One goal of all the activity is to fuel growth in the city's 1,200ha North Riverfront Business Corridor. A study costing \$800,000 is looking into how to further use the area, which is already home to a reported 560 companies, many of which take advantage of the site's access to river and rail. There's more happening just to the south, where the \$670M Mississippi River Bridge Project is under way.

The MRT project, driven in part by severe flood damage to the site's South Dock in 2008, is a key component in all this. For one thing, annual capacity at the facility will go from 3.63M tonnes to a potential 5.44M tonnes. Susan Taylor, SLDC's major project manager, said: "The existing South Dock is over 50 years old and nearing the end of its useful life."

"To rebuild it we will integrate a new bulkhead with the existing structure. In addition, the project will include steel straps across the existing cellular dock's sheet

piling to restore tensile strength to the sheet pile interlock."

Taylor continued: "The new middle dock uses a typical combi-pile wall, which will connect the existing South and North Docks and will necessitate extending an existing large-diameter storm sewer and relocating its outfall structure."

According to Taylor, the most challenging design aspect so far "has been to establish the remaining strength of the facility so it can be relied upon to support the new bulkhead and yard".

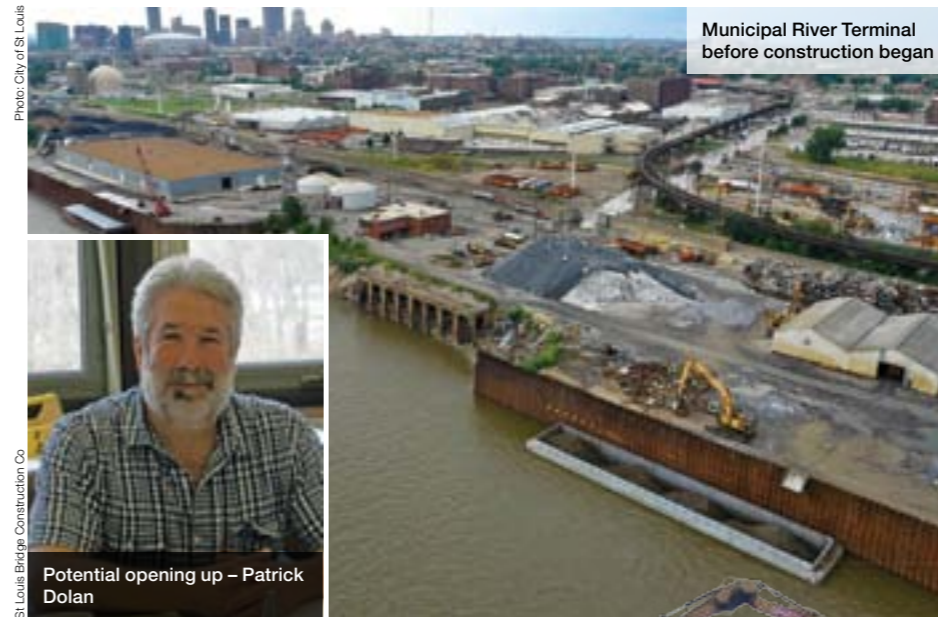
Scope of work

Specifically, 404m of dock is being constructed, consisting of a 174m section built with king piles and a sheet pile combi-wall and 230m of dock that is reconstructed with pipe piles and sheet piles. It will be connected to the North Dock section to create a 609m wharf.

St Louis Bridge executive vice-president Patrick Dolan outlined the various steps in the construction process:

- Clearing 60,000m³ from the area in front of the existing dock, a contract that's gone to Gateway Dredging and Contracting, which is using the suction dredger *Chesterfield*
- Using the dredged river sand for backfill behind the new combi-wall. Sand wasn't all that was found – there was also scrap steel, including cubed cars and engine blocks
- Demolition of a section of existing concrete dock
- Installation of the king pile/sheet pile combi-wall, using a spud barge-mounted

Photo: City of St. Louis



Potential opening up – Patrick Dolan



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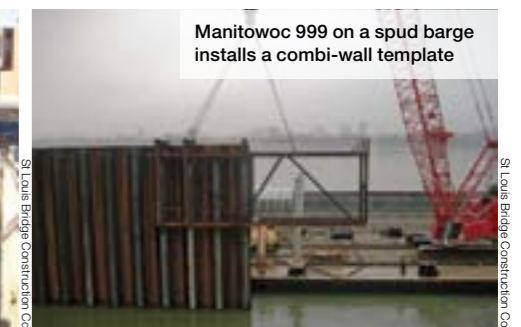
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Manitowoc 999 crane fitted with an APE 200-6 hammer to drive the piles home.

Technicians are also installing concrete plates and excavating around existing sheet piles, which are used to support the new dock face.

Challenges

The project is happening within a 112km-long US Army Corps of Engineers St Louis district, which contains 130 docks and related facilities. Inevitably, delays arise because of the need to keep the navigation channel dredged.

Late last year, for example, the corps had to briefly stop barge and other traffic near St Louis while a build-up of sediments was cleared from the channel.

Several rounds of dredging in the area finished last December and, fortunately, "sedimentation has not significantly re-occurred," commented Lance Engle, the corps' dredging project manager.

In any event, the corps performs maintenance dredging from August to December.

In other initiatives, there's lock and dam work under way by the corps, while several private terminal operators have been active with their own dredging and construction initiatives, with more work on the drawing board. It's no surprise.

Engle characterises the waterway near St Louis as "a prime location for barge traffic as the last lock on the upper Mississippi River system is just north of St Louis."

"Generally, tows and the barges departing St Louis are twice as big as those that operate in the pooled reaches upstream," he added.

"Thirty barge tows or more heading downstream from St Louis are not uncommon."

Back at MRT, technicians were taking delivery and installing pipe pile as this article was being written, as well as excavating old cells, bringing existing sheet pile up to standard and demolishing the old concrete dock. "The work is logistically and economically important," Dolan said.

"The city's investing in this facility and potential's opening up: a renovated port needs more people to work it."

Finally...

Technically speaking, the project may be routine – but easy? Not with a river fluctuation of about 9m.

As Dolan added with good humour: "I always like to point out that we make schedules in the office, where the temperature is always mild. It never rains or gets muddy and we never encounter any high water there, either."

Such contingencies are likely to come up again because the North Dock, which Dolan's company constructed in 1983-84, is half way through its lifespan.

Taylor added that it's "currently being evaluated for its long-term maintenance needs, including dredging. We're also looking at removing debris, spilled cargo and other items from in front of the Municipal River Terminal's entire wharf."

With the present construction enabling a lot more tonnage and driving the area's general goals, the need for such work seems almost as certain as high water.

» <http://stlouis-mo.gov/government/departments/sldc/MRT.cfm>