

# San Francisco Chronicle

## *Transbay Transit Center work progressing*

By John King – San Francisco Chronicle, December 24, 2012

Jack Adams is standing 65 feet below the front doors of nearby towers, on sandy soil clean enough for a remote beach. Rows of enormous hollow steel pipes are layered above him at 15-foot intervals, each horizontal pipe braced between distant concrete walls that reach 110 feet into the earth.

"That's some erector set, eh?" Adams asks, looking up into the metallic thatch while a bulldozer pushes wet sand into a pile not far away.

This is the view of San Francisco from the biggest hole the city has ever seen - and a hole that still has growing to do. Adams is a manager at Turner Construction, which coordinates the work of the various contractors involved in making the long-planned Transbay Transit Center a reality.

For now, the brunt of the physical task is borne by the 150 or so workers toiling weekdays in around-the-clock shifts on the methodical excavation of the three-block-long space that will contain the rail platforms, concourse and train tracks for the terminal set to open in 2017. And even though work began in earnest more than a year ago, nothing structural will appear above ground before the spring of 2014.

The new center will be roughly a quarter mile long and 70 feet high, with a spidery glass form extending above First and Fremont streets. The aboveground portion will serve bus passengers as well as provide shops, circulation areas and a rooftop park.

### Down first

First, though, the building needs a secure foundation. That's why you go down before you go up.

Workers spent 2012 building the equivalent of a giant bathtub that starts at Fremont and extends almost to Second and is 140 feet wide from north to south. After a temporary wall was built long the rim, the top 15 feet or so of dirt was removed and sent to landfill, since it contained the debris and ground pollution that accumulates in cities.

Once the scene was set, a 3-foot-wide trench along the rim was pummeled with water so that the soil turned into mud, portions of which then were pumped out as cement was pumped in. The two elements churned together so that concrete formed; the blending action continued until a layer of solid clay was reached 110 feet below sea level.

Ready to start digging deep? Not exactly.

The soil inside the "tub" needs to be drained of as much water as possible, so pumping goes on continually. And soil removal proceeds west to east rather than bottom to top - bulldozers push dirt into piles, then excavators reach down from the surface to scoop it up and drop it into dump trucks.

"Think of it as a series of benches or terraces," says Robert Beck, senior project manager for the Transbay Joint Powers Authority. "Once we've made a clearing 15 feet deep, that's when another row of horizontal beams are put in" to keep the outer rim of concrete from buckling.

"What you see is pretty standard around the world, this kind of deep horizontal bracing," Beck says before he and Adams lead a reporter down 82 steps within rickety scaffolding to the bottom of the artificial short-term canyon.

The scale is what makes things complex.

Both First and Fremont streets, for instance, now are bridges as they pass above the deepening hole. They rest on trestles that were installed over holiday weekends, a time when little traffic was heading through the Financial District.

#### Temporary road

There's an east-to-west temporary road on trestles above the excavation as well, so that the vehicles removing the dirt can get closer to the action. And with neighbors that include a condominium tower and office buildings filled with blue-chip tenants, weekly construction updates via e-mail are a top priority.

By this time next year, Beck estimates, the train station shell will fill at least the eastern half of the terminal site, with work still under way to the west. There will be a 5-foot-deep concrete mat underneath the concrete walls of the "box" that will sit below the operating terminal, waiting for train service to arrive. That target date is 2020, though the Transbay authority still is working to line up the \$2 billion needed to bring commuter rail service downtown.

But if you happen to walk past the site next December, the views to east and west will still be wide open.

"A year from now, on the street, you won't see much," Beck says. "With projects like this, you spend half the entire time below ground. Then the steel seems to go up overnight."