U.S. railroads operate more than 140,000 miles of track, and rail yards and tracks occupy significant portions of major cities. As cities continue to grow, these overlooked transportation spaces become obstacles in prime downtown locations.

How might we come to terms with competing desires for active rail lines and new buildings in the center city? Because track level areas must remain undisturbed, designers face unique challenges in figuring out what to do with the space above.

The 150 North Riverside building in Chicago is a high-rise office tower that addresses this issue with a creative solution. The unique structure pull the building’s full weight into its center core, allowing a small footprint at the ground level. The design overcomes the site challenges and provides a 54-story tower with efficient, premier office space. The condensed lobby and elevator cores allow the majority of the remainder of the site—more than 75%—to be a landscaped public park, plaza and Riverwalk, built largely on a decked structure over the train tracks.

Image, top right © Lester Ali Photography.
To complete Hudson Yards, two “platforms” are being constructed to bridge over 30 active Long Island Rail Road (LIRR) tracks. The finished buildings on this mega-development site have caissons drilled deep into bedrock with supportive columns shooting up between the platforms. The location and construction of these columns have to be delicately laced around a warren of underground tunnels, tracks and LIRR facilities, which must remain active throughout construction; as a result, less than 40% of the entire site is suitable for supporting buildings. The eastern portion of one platform alone will use 25,000 tons of steel, 14,000 cubic yards of concrete and weigh more than 35,000 tons. Yet emerging above this complex knot of high-octane engineering is a highly desirable, rapidly growing district taking shape, home to a collection of shops, restaurants and outdoor spaces, in addition to office and residential towers.