

Building Introduction

158 W 14th Street Hoboken, New Jersey, or otherwise known as the Coconut Building, is a turn of the century warehouse, once used for food processing. Bijou Properties plans to construct an addition and renovate the building for 28 condominiums, 2 duplexes, and retail space. The design team includes SHoP Architects and Buro Happold Consulting Engineers, both known for innovation and sustainable design. When it is built, the Coconut building will be the first LEED rated building in Hoboken.



Building Appearance

The renovated buildings' façade is beige brick masonry; its style is typical to buildings from the turn of the century. The new construction is zinc metal paneling, with alternating full height glazing.

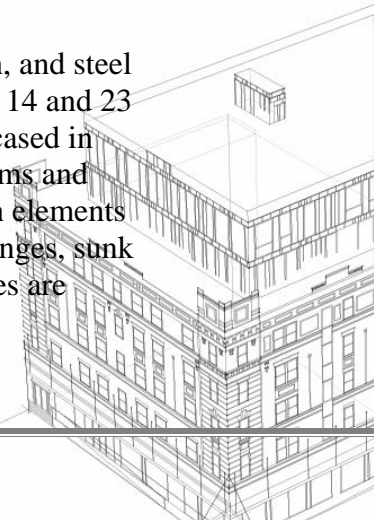
The building design includes an addition that adds 3,000 s f to the original five floors, and adds two new floors to make it a seven story building.

The roof, which has mechanical space and terraces, has a sedum plant green roof covering.

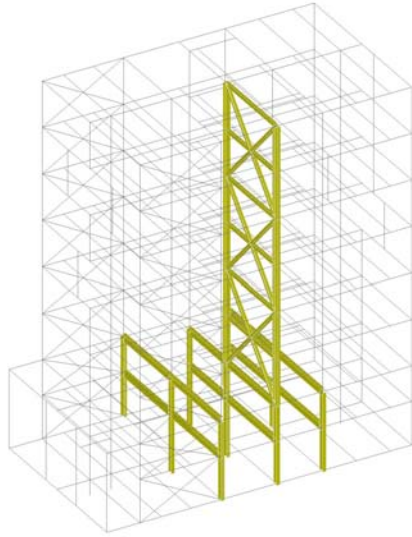


Structure

The original building is a concrete, cast iron, and steel structure. Circular, cast iron columns are spaced at 14 and 23 feet with diameters ranging from 12" to 5", and encased in concrete. The floors are supported by concrete beams and girders, and a 5" formed concrete slab. The tension elements of the concrete beams and girders are steel wide flanges, sunk into each beam and girder. The beam's wide flanges are



supported by shelves cast integrally with the column. The external walls have a similar construction, but fewer columns and longer spans. The foundation is comprised of a 7'x7' stacked brick pier under each column, with a 10'x 10' and 2' deep footing below each pier, integral with the slab. The top two floors (4th & 5th) of this old section will be internally replaced to support the additional 6th and 7th floors, and the lower columns will be reinforced to be made more rigid and support the additional load.



The addition is steel frame construction. The first two levels are a moment frame to create clear spaces for retail and mezzanine, and the remaining floors are a braced frame construction. The stair wells and elevator shafts in the renovated portion will be framed with steel members.

Mechanical Design

The condominium building has a central heating and cooling system. Two 1.3 MMBtu boilers heat a circulating water loop supplying the rooftop unit coils and fin tube radiators in the perimeter rooms. Two 104 ton scroll chillers and two cooling towers maintain a chilled water loop which supports the fan coil units and the rooftop units. The two roof top air handling units provide tempered ventilation. A 15000 CFM unit supplies outdoor air to individual fan coil units in the apartments and to the basement, and a 1755 CFM unit supplies air to egress corridors. Two fans on the roof supply unconditioned ventilation to the boiler room and to pressurize the stairwell, and several exhaust fans reject air from the apartments.

