

# J O B P R O F I L E

*The Building  
Envelope  
Company*



## BOSTON PRUDENTIAL TOWER

Boston, Massachusetts

Built in 1964, the Prudential Tower was then the tallest building outside of NYC. Fondly called the 'Pru' by locals, the 52 story building is home to hundreds of tenants, 1 360 degree panoramic view observation deck, a shopping mall and one of Boston's best restaurants on its highest floor.

PROJECT SIZE	31,500 Sq. Ft.
PROJECT LENGTH	May 2004 - August 2005
CONTRACTOR	Titan Roofing of Chicopee, Massachusetts
ROOFING CONSULTANT	Facility Engineering Associates of Virginia
DECK TYPE	Concrete
INSULATION	Polysocyanurate/Dens-Deck
BASE SHEET	Sopralene 180 Sanded
CAP PLY	Sopralene 250 FR GR
FLASHING(BASE)	Sopralene 180 Sanded
FLASHING(CAP)	Sopralene 250 FR GR

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### BOSTON PRUDENTIAL TOWER Continued



At 38 years old, the original coal tar roof was starting to show its age. The building owners, concerned about their long-term investment, commissioned a study. Roofing consultant Facility Engineering Associates (FEA), PC of Virginia and their senior project manager Jim Justus were asked to determine if the water leaks meant a total roof replacement. After careful study in 2003, the engineers at FEA recommended exactly that, all three original roof areas, the 51st floor, the 54th floor and the 55th floor roofs all needed to be replaced. The coal tar roof, comprised of layers of asphalt and felt, had water trapped within the system, and due to the exposure had exceeded its useful life. The entire roof system, comprised of protection boards, insulation and the multi-ply layers would have to be scrapped off and removed.

Designs were completed and construction started in early 2004. The 51st floor featured an inverted roof, with a concrete slab over the roofing membrane. The concrete slab would have to be removed prior to removal of the membrane, while keeping the roof watertight. The 54th floor has over fifty antennae mounts, and three electrical equipment boxes. The cooling towers are also located in recessed areas on the western side, and operate year round. The 55th floor has the main mast antennas, a service elevator penthouse, and numerous other additional antennae mounts and pieces of equipment. The main mast antennas radiate down to selected areas on the 55th and 54th floors with microwave and radio wave energies that are above acceptable expo-

sure limits. In addition, the long list of challenges included uninterruptible communication signals, moisture from the cooling towers and exhaust fans, extremely hard to remove coal tar and exceptionally tight access under much of the electrical equipment. The job was further complicated by the fact that one of the roofs was directly over the Top of the Hub restaurant; patrons would certainly not tolerate the noise required to demolish the old roof. To accommodate the restaurant and the building's other high-end tenants, much of the work would be done at night. The old roof on the 51st floor, placed under a concrete slab, would require noisy demolition and a constant flow of wheel barrels on elevators to take the over 200 cubic yards of concrete down to street level for disposal. With this long list of challenges, FEA formulated the bid requirements. On top of the list were an installer and manufacturer that could mitigate noise, provide a durable multiply system, longevity, protection from foot traffic and dropped tools and a warranty that would coexist with the owner's desire to keep the building for a long time. After careful consideration, the team of Titan Roofing and SOPREMA, Inc. was chosen. The application skill of Titan combined with SOPREMA's system designed for the dramatic wind uplift at 55 stories, proved the winner. Additionally, the challenge of flashing literally hundreds of penetrations was no match for SOPREMA's Alsan Flashing. The proprietary material saved labor and installation time. Alsan flashing was simply painted-on. The field base sheet was Sopralene 180 sanded and the field cap sheet was Sopralene 250 FR GR.