Georgia-Pacific
Gypsum

PROJECT PROFILE

The Target Center

Minneapolis, Minnesota

Owner
City of Minneapolis

Roofing Contractor
Stock Roofing–Fridley, MN

Architect
Leo A Daly–Minneapolis, MN

Roofing Consultants
INSPEC®, Inc.–Minneapolis, MN

Landscape Architect
The Kestrel Design Group–Minneapolis, MN

* Information presented in this project profile is for illustration purposes only. Please consult the appropriate system manufacturer or design authority for system specifications and instructions for any specific system or assembly. Georgia-Pacific Gypsum does not provide roofing design services.

DensDeck® Prime Roof Board is Integral Part of New Vegetative Roof at Target Center*

When the City of Minneapolis needed to replace the nearly two-decades-old roof of the Target Center, the Upper Midwest's premier entertainment facility, it took a decidedly progressive approach. It replaced the arena's aging roof with a vegetative roof, bringing a long-life, ecological solution to the facility in the heart of downtown Minneapolis.

And for a high performing, versatile coverboard that would match the innovation of the project, Stock Roofing Company selected Georgia-Pacific DensDeck® Prime Roof Board due to its proven history, strength and reputation for superior performance. Not only was DensDeck Prime Roof Board used as a cover board in the roof assembly beneath the vegetative roof, but also in the roof assembly of the Target Center's 29 non-vegetative smaller roofs.

Gary Patrick, vice president for roofing consultant INSPEC®, said DensDeck Prime Roof Board was a natural choice for use in the extensive system. "DensDeck functions as a great cover board for attachment of the waterproofing membrane in The Target Center's vegetative roof assembly," he said. "It provides a uniform substrate and can handle traffic very effectively. While it's not overly thick or heavy, DensDeck provides excellent support and substrate. This is vital when you consider the vast number of people—and products—that are moving over the system, especially during construction."

The Growth of Vegetative Roofs

Designed to be low maintenance, vegetative roof systems are becoming increasingly popular as energy costs rise and environmental awareness increases. They not only offer aesthetic value, but can often reduce heating and cooling demands, improve air quality, help insulate against noise pollution, reduce urban heat island effects, and hold back stormwater runoff from sewer systems. Vegetative roofs can also extend the life of low slope roofs—all important factors for the 830,000- square-foot (77,107 m^2) Target Center.

Assembled in a series of layers, a typical vegetative roofing system begins with the installation of various structural decks and insulation. The insulation is sometimes covered with a layer of coverboard like DensDeck Prime Roof Board, followed by a waterproofing membrane. Then a protection fabric/root barrier, a drainage layer, filter fabric and a moisture retention mat are all added. The project is capped off with growing medium and plants.

In the 115,000-square-foot (10,684 m^2) Target Center vegetative roof, ¼″ (6.4 mm) DensDeck Prime Roof Board was installed over an Electronic Field Vector Mapping grid, which was installed above three 2″ (51 mm) layers of insulation. A G476 Sika Sarnafil® PVC waterproofing membrane was installed over the DensDeck Prime Roof Board. The waterproofing membrane is specially designed to remain watertight in extreme conditions including constant dampness and exposure to

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The Target Center's new vegetative roof is the largest extensive vegetative roof in Minneapolis and the fifth largest in the country.

plant roots, fungi and bacterial organisms. DensDeck® Prime Roof Board was attached using Millennium Weather-Tite®, a low-rise foam adhesive.

The use of Millennium Weather-Tite was the perfect choice because DensDeck Prime Roof Board has an enhanced surface that provides a strong bond to the insulation. "DensDeck provides a great protection layer in the system," said Rex Greenwald, environment solutions specialist for the project's contractor, Stock Roofing Company —a Tecta America Company. "A durable top layer is extremely necessary and this was a great choice. In addition, the membrane system adheres to it successfully and that's an important criteria for us."

Stock Roofing installed 115,000 square feet (10,684 m^2) of DensDeck Prime Roof Board in the upper (green) section of the arena roof and an additional 22,000 square feet (2,044 m^2) of DensDeck Prime Roof Board in the other lower sections.

Extended Roof Life

The roofing project presented several challenges: the size and scope of the project, the number of distinct disciplines integrated into the green roof, and the addition of customized features. Of particular importance was protecting the waterproofing membrane and insulation with coverboard.

"These systems see more roof traffic both during and after the assembly so you need a proven layer of protection in the installation process and beyond," explains Frank Anderson of Leo A Daly, architects for the project. "The coverboard not only needs to provide extra protection from foot traffic, but from elements such as hail, snow, wind and moisture." The roof assembly beneath the vegetated roof is expected to last up to 40 years, nearly twice that of a conventional roof and DensDeck Prime Roof Board is a key component in the assembly.

"The City of Minneapolis is proud to be making continuing strides in our sustainability goals," said Andrea Petersen, projects coordinator for the Minneapolis Department of Community Planning and Economic Development. "The addition of the vegetative roof at the Target Center is an excellent example of a successful installation at a high-profile venue."

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Georgia-Pacific Gypsum Technical Hotline
U.S.A. and Canada: **1-800-225-6119**
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