Maple Leaf Gardens
NRCA Gold Circle Award Nomination Package:
Dean-Chandler Roofing Limited

Siplast would like to nominate **Dean-Chandler Roofing Limited** for an NRCA Gold Circle Award in the category of **Innovative Solutions – Reroofing** for **Maple Leaf Gardens**, Toronto, Ontario. The project successfully took the renovation of a historic landmark, with its logistical challenges and application difficulty, and created a roof system that will not only preserve the structure by offering watertight integrity, but also contribute to environmental efforts by utilizing unique green solutions.

Basic Project Information

Project Name & Location
Maple Leaf Gardens
60 Carlton St. Toronto, Ontario

Roofing Contractor
Dean-Chandler Roofing Limited
275 Comstock Road
Scarborough, Ontario
President: Steve Tinling

Roofing Consultant
IRC Building Sciences Group Inc.
7565 Danbro Crescent
Mississauga, Ontario

Architect
Turner Fleischer Architects Inc.
67 Lesmill Road
Toronto, Ontario

General Contractor
Buttcon Limited
8000 Jane Street
Tower B, Suite 400
Concord, Ontario

Roofing Manufacturer
Siplast
1000 E Rochelle Blvd.
Irving, Texas

Type of System

	Existing Roof	New Roof
Roof Area 1: 600 Squares Dome	The existing roof remained in place, and consisted of: – Vapor barrier. – Wood strapping. – EPS insulation. – Plywood. – PVC membrane.	The new roof assembly consisted of: – Paratherm polyisocyanurate insulation. – DensDeck Prime. – Siplast Paradiene 20 EG SA. – Siplast Parafor 50 TG Eco-Activ.
Roof Area 2: 500 Squares Flat Areas	The existing roof was removed, and consisted of: – Vapor barrier. – Fiberglass base cap insulation. – 4-ply built-up roof.	The new roof assembly consisted of: – DensDeck Prime. – Siplast Paradiene 20 TG. – DensDeck Prime. – Siplast Paradiene 20 HV TG. – Siplast Parafor 30 TG Eco-Activ.

Project Overview

When Dean-Chandler Roofing Limited was invited to submit a tender for the reroofing of Maple Leaf Gardens, the prospect of being part of a difficult project that transformed the home of one of the original six NHL Teams into a flagship grocery store and the athletic center of a local university was certainly exciting. But all involved knew that the project, with its signature dome, would have plenty of challenges.

Maple Leaf Gardens

Maple Leaf Gardens is the only
Original Six arena
still used for hockey.

Maple Leaf Gardens was built in 1931 by Leafs Managing Director Conn Smythe at a cost of $1.5 million dollars. Since then, the facility has seen a lot of hockey history, and become a revered site for sports fans. In 1999, after 67 years, the Maple Leafs played their last game at the arena, and it was time for the facility to find a new purpose. The Loblaw Companies, Canada's largest food retailer, purchased the Gardens in 2004. With respect for the building's heritage, it has been converted from the home of the Leafs to a multi-use facility that now includes the flagship Loblaws store and the Mattamy Athletic Centre of Ryerson University where various university sports will be played including, of course, hockey.

Part of the extensive renovation project included installation of a new roof system. The existing 25-year old PVC single ply roof on the building's signature dome was past its useful service life, and the 4-ply built-up, gravel surfaced system on the flat areas was in need of replacement.

The team of Dean-Chandler, IRC Building Sciences Group, Turner Fleischer Architects, and Buttcon Limited created a roof system that will ensure that this designated Canadian National Historic Site will remain open to the public for years to come. In addition, by considering the project from an environmentally conscious perspective, they chose a roof membrane that will help to clear harmful pollutants from Toronto's urban air.

Scope of Work

The Flat Area

The 500-square, 4-ply built-up roof on the flat areas of the building were removed. In a phase application, as sections of the flat area were removed, DensDeck Prime and Siplast Paradiene 20 TG were installed. The DensDeck Prime was mechanically fastened to the steel deck, and the Paradiene 20 TG was torched in place. As Dean-Chandler was completing this phase of the work, Buttcon Limited was installing roof curbs/supports for the new rooftop equipment.

Once the equipment curbs/supports were in place, Paratherm Polyisocyanurate Insulation and DensDeck were mechanically fastened into the steel deck, then a Paradiene 20 HV TG base ply was torched to the DensDeck and Parafor 30 TG Eco-Activ cap was torched to the base.

The Dome

The existing PVC membrane on Maple Leaf Gardens' 600-square signature dome remained in place. The Siplast Paratherm Polyisocyanurate Insulation and the Dens Deck were mechanically fastened through the existing roof into the steel deck. Paradiene 20 EG SA base was adhered to the DensDeck and the Parafor 50 TG Eco-Activ cap was torched to the base.

The Maple Leaf Logo

The existing roof featured the iconic blue Maple Leaf logo, which had been approved by then-owner Harold Ballard at the time the old roof was installed at a size of 25 feet x 25 feet.
During the reroofing project, there was much debate about what to do with the logo portion of the existing roof.
Should it be removed and memorialized? Sold?
In the end, it was decided to leave it in place, so it would always be a part of the historic building.

Project Challenges

The Site Location

The logistics of servicing the downtown job site took extensive planning and coordination. The facility is bordered by a busy artery to the south and east, and a highrise building to the west. A small street on the north side of the site provided the only access for all the trades.

The Steep Slope

The project's greatest challenge was the steep slope. Of course, the steep slope precluded typical jobsite material storage. Careful planning and a little innovative thinking were required to get the material onto the slope efficiently and safely. There were obvious safety concerns for the ten-man crew working on such a steep slope. Additionally, the roof's high visibility made parallel, straight lap lines and cleanliness imperative.

Benefitting the Environment

A Green Solution

The roof consultants at IRC Building Sciences Group specified the torch-applied two-ply SBS-modified bitumen roof membrane installed on Maple Leaf Gardens. The system features Siplast's Eco-Activ® cap sheet. Eco-Activ is surfaced with Noxite® roofing granules. By acting as a photocatalyst, Siplast Noxite Granules increase the speed of degradation of harmful nitrous oxides (NOx) in the air that contribute to the formation of low-level ozone, smog, and the greenhouse effect. Siplast has achieved a UL Environment claim validation for Eco-Activ Roof Membrane's ability to remove an estimated 417-4,143 G NOx per roofing square over 20 years.