2016 GOLD CIRCLE AWARDS

CASTRO ROOFING’S MASTERPIECE
SMU OWEN ARTS CENTER
The Owen Arts Center was designed by architect George L. Dahl and consists of three main buildings: Mudge Art Building, Forbes Music Building and the Ruth Sharp Collins Drama Building.
Application
Client Introduction
General Information
Uniqueness
Challenges
Existing Roof Failure
Safety
Commendations
Project Photographs
AWARD BOOK CONTENT
SMU Owen Arts Center consisted of multiple roof elevation levels & roof systems
2016 Gold Circle Awards
Official Nomination Form

Please complete the form and submit it with your nomination package.

Nomination company information

- Contact person: John Harrison - Project Manager, Southern Methodist University
  - Address: 6111 Harry Hines Blvd., Dallas, TX 75215
  - Phone: 214-398-3800

- Project architect: Gallerie Lenne
- Project consultant: Terrell Washington
- Other companies involved: SGR2 Construction, GAC Design, Trakisa Factors, SMU, Rautenbacher Landscaping, Olympic Contractors, Green Acres, Master Metals, Candelaria, Nine West

Date of commencement: October 2014 - February 2015
Official project name: SR101, Owen Arts Center

Signature:

Date: 10-06-15
The Owen Arts Center was designed by architect George L. Dahl and consists of three main buildings: Mudge Art Building, Forbes Music Building and the Ruth Sharp Collins Drama Building. The center is home to dance, music and theatre performance and rehearsal spaces, art galleries and studios, the administrative offices of the Temerlin Advertising Institute and the Meadows Art, Art History, Arts Management and Arts Entrepreneurship, Dance, Music and Theatre departments.

Public performance spaces within the Owen Arts Center include Caruth Auditorium, Bob Hope Theatre, Greer Garson Theatre, Margo Jones Theatre, O’Donnell Lecture-Recital Hall, Sharp Studio and Taubman Atrium. Art spaces include the Doolin Gallery and Free Museum of Dallas. Students participate in lectures, film screenings, set construction and music lessons and take advantage of opportunities to form relationships and collaborations across many art forms. The inspiring and challenging environment creates a nexus of energy, creativity and commitment.

What is now the Meadows School of the Arts began as the School of Music in 1917. It became the School of the Arts in 1964, incorporating studies in art and theatre. In 1969, through the generosity of Algur H. Meadows, his family and The Meadows Foundation, the school was named the Algur H. Meadows School of the Arts. Mr. Meadows, a businessman from East Texas, built General American Oil Company of Texas into one of the nation’s most successful independent oil and gas production companies. Believing that his own life was greatly enriched by giving, he generously shared his wealth with many charitable causes, including SMU, benefitting the people of the state that had been so kind to him.

Today, the Meadows School has achieved prominence as one of the foremost arts education institutions in the United States and offers training in an unusual mix of the arts - visual (art and art history), performing (dance, music and theatre) and communications (advertising, cinema-television, corporate communications and public affairs, and journalism) - as well as a preeminent program in arts administration. To this day, the legacy of the school remains linked to important names of the past.

The Meadows Museum is one of the most important chapters of the Meadows school story. After Algur Meadows made a gift of his Spanish art collection to SMU, it became one of the most significant academic resources of the University and is now considered one of the finest and most comprehensive collections of Spanish art outside of Spain. Housed in the Owen Arts Center for over thirty years, it now resides in its own building prominently located on Bishop Boulevard at the entrance to the campus. Inaugurated by His Majesty Juan Carlos and Her Majesty Sofia of Spain, the Meadows Museum was reopened with great fanfare in 2001. It remains an important cultural and educational institution and one of the Meadows School’s and SMU’s most important assets.
The Center for Fine and Performing Arts cost approximately $11 million and was the final piece of the Galleria Complex. The five connected buildings began with the Library, and also include the Audio–Visual Classroom Center, Math–Science Center and Student Health and Activities Center, and concluded with the Center for Fine and Performing Arts.
GENERAL INFORMATION

Owner
SMU
3050 Dyer St
Dallas, TX 75225

Architect
George Dahl

Scope of Work
- Modified Bitumen Roof System (102,600 sq. ft.)
  - Tear-off down to structural decks
    - 22 gauge metal
    - Insulation light-weight concrete
    - Structural Concrete
  - At light-weight concrete areas installed roof system as follows:
    - Mechanically attached base sheet
    - Torched Soprema base sheet
    - Torched Soprema cap sheet
  - At metal and structural concrete decks installed roof system as follows:
    - Mechanically attached polisocyanurate insulation
    - Sopraboard
    - Torched Soprema base sheet
    - Torched Soprema cap sheet

- Composition Shingle Roof System (5,300 sq. ft.)
  - Tear-off down to structural wood deck
  - Install new underlayment
  - Install new GAF Slateline composition shingles

- Skylights (78 Skylights)
  - Replaced fifty four skylights

- Lightning Protection
  - Removed and re-installed the lightning protection system

- Roof Elevations
  - 18 different roof elevations

Before Re-roof
Existing coal tar pitch
54 skylights out of 78 on the entire project were removed and replaced. Special care was taken at the interior during demolition so as to protect both the students and staff from any possible dangers.
UNIQUENESS

Multiple metal deck areas contained phenolic insulation, a very corrosive insulation when wet that can easily cause catastrophic metal deck failure. Fortunately the metal deck areas with phenolic were painted decks and not galvanized therefore no discernible damage was identified at these areas at the time of tear-off activities.

Phenolic insulation location

Removal of the phenolic insulation
All architectural shop drawings were created in-house by our design project consultant.
UNIQUENESS

The complexity of the different roofs and assemblies required was unique. In all, four different roof assemblies were used and needed to complete all areas within the scope of work. From the composition GAF Slateline roof system to the Soprema Modified Bitumen roof system over light-weight concrete, all required coordination with the manufacturer to ensure warranty compliance regardless of the different assemblies needed.

Remove & replace with GAF Slateline composition shingles
In total there was basically only one area for raising and lowering materials and debris. Of course, this presented the challenge of having to move materials long distances to the debris lowering site. In addition, due to multiple roof areas and the multiple heights encountered in the different roof areas, materials had to be double and triple handled to finally be able to reach the final destination whether lowering or raising materials.
**CHALLENGES - STAGING AREAS**

The building is surrounded by either the street or other buildings. Meaning that between the accompanying foot traffic of a major university and the logistics involved due to the proximity of other buildings, landscaping, trees, and the street, the amount of staging area was very limited. Much effort was undertaken in coordination with the owner, roofing suppliers and manufacturers’ deliveries to accommodate the staging areas available. Many deliveries were undertaken to supply the project through the construction months.

The staging area was limited to one location of 400 sq. ft. to roof 107,900 sq. ft. This presented logistical difficulties because of the traffic in and around the area. Of particular difficulty was removing full dumpsters and replacing the empty dumpsters. In some instances the dumpster company just wanted to leave without performing the dumpster swap-out because of the patience required to accomplish. We also had difficulty with professors and students attempting to enter restricted areas even though they were clearly marked. Special safety precautions were taken for the well-being of all pedestrians walking near the construction site.
This area could not be reached by crane (located in the middle of the roof). A chute was constructed to lower all debris down to a lower level and from there carried to the one debris lowering site. A very long ladder was also used from roof level to roof level to reach this area as there was no interior access via roof hatch. A hoist was used to raise the needed materials to this high roof area.
CHALLENGES - COAL TAR PITCH REMOVAL

The existing roof system consisted of multiple coal-tar pitch with a flood coat and gravel surfacing. Coal-tar roof systems are particularly difficult to remove in re-roofing projects such as this project. The coal-tar has a low softening point which causes the pitch to “run” in hot weather. Therefore, no demolition can realistically occur during hot days because the pitch turns into a “gooey” mess. Another aspect is that as the pitch roof system is removed it generates airborne particles that are irritating to the skin and specially so if there is sweat present. Special safety gear is worn to protect from this irritant. The above coupled with the logistics of the many multiple roof areas and the need to double and triple handle the debris made for a very difficult tear-off scenario.

Because this roof system’s adhesive, the coal-tar itself, has a low softening point, it tends to soften and “melt” during hot weather. Therefore, the lightning protection cables dug into the pitch flood coat and was actually surrounded by the pitch. Every cable was carefully removed one by one and then meticulously cleaned to remove the coal-tar for reapplication once the new roof system was made ready to receive the lightning protection.
Existing coal tar pitch roof was improperly repaired causing pre-mature roof system failure
REASON FOR ORIGINAL COAL TAR PITCH FAILURE

Coal Tar Pitch built-up roofing (BUR) systems consist of alternate layers of coal tar pitch and reinforcing felts, topped with a pouring of coal tar pitch into which an aggregate surface is embedded. Coal Tar built-up roofing provides one of the most durable roofing systems known due to its inherent waterproofing and weathering characteristics. An independent study completed showed that coal tar pitch roofing systems has not only the highest durability of any membrane roofing system on the market today (there are documented roofs lasting 75 years) but also the lowest life cycle cost and the highest percentage of roofs surviving after 30 years.

Coal Tar built-up roofing systems are considered the Mercedes of commercial roofing systems. The Coal Tar Pitch roof at Owen Art Center still had plenty of life left, but due to leak repairs being done incorrectly by other roofing contractors (using asphalt materials, leaving the felts exposed to the sun and not repairing the roof leaks) throughout its history caused the roof to fail prematurely.

This is a lesson learned for commercial building owners and managers to not only qualify the skill and experience level of the roofing company, but more importantly the crews actually doing the work.
Safety report was done throughout the project.

At the time of my visit I observed the following:

1. **Proper PPE being used by all workers and aware of potential hazards.**
2. **Fall protection harness and lanyard in good condition at time of visit.**
3. **Warning lines need attention for openings.**
4. **First aid kit good and accessible to all workers.**
5. **General housekeeping conditions acceptable.**
6. **Roof access control lines erected as required.**
7. **Material storage acceptable at time of visit.**
8. **Tool/tool handles not in good condition at time of visit.**
9. **Propane tanks not secured at time of visit.**

All items noted are based on present observations and certificates of occupancy when not noted otherwise. We cannot accept any liability or other representations, the on-site work of all persons, and responsibility is carried out by others as noted.
Our work at SMU Owen Art Center posed safety challenges that were unique, as in any job. Castro Roofing’s regular on-site, “tool box talk” safety meetings were scheduled and held throughout the duration of the entire project. Foremen took the lead by administering the meeting and making recommendations on upcoming portions of the project. A third party job-safety expert was hired to provide an additional job-specific safety plan that was implemented without fail.

We can proudly report that NO accidents or injuries occurred the entire time that Castro Roofing worked on SMU Owen Building project.

**Important Tool Box Talk Items:**
- OSHA Safety Standard Review
- 100% tied-off rule in full effect
- student and staff environment safety requirement
- scaffolding
- hand tools
- eye protection
- protective wear (gloves, clothes, and shoes)
- hard hat safety
- back injury protection
- no horseplay on site
To WHOM IT MAY CONCERN:

CASTRO ROOFING recently performed a complex multilevel roof replacement on one of our buildings on campus. Castro completed the work on time and under budget. The Castro Project Manager (A.J. Rodriguez) and Crew Leader were very conscious of the sound being generated by roof replacement and of the safety of the occupants of the building and the adjacent buildings.

The whole Castro team is very safety minded and often during my inspections of the project, I would encounter the safety supervisor doing on-site safety checks.

As the project manager for the roofing project that Castro completed, I can attest to the job well done by Castro Roofing.

Respectfully,

[Signature]

[Name]

Project Manager

Southern Methodist University
COMMENDATIONS

Commendations

Dear Ms. Anderson,

I am writing to commend Castor Roofing for the excellent job that your team performed on the Stem Cell Center project. We were strongly impressed with your company's professionalism and strong work ethic, as well as the quality of your work.

The job was completed on time and according to the specifications. Your team worked diligently, staying within the budget and meeting all deadlines. We are very pleased with the work that your team has performed, and we look forward to working with you again in the future.

Sincerely,

[Signature]

[Name]

[Position]

[Company]

[Date]
PROJECT PHOTOGRAPHS
PROJECT PHOTOGRAPHS
PROJECT PHOTOGRAPHS
PROJECT PHOTOGRAPHS
Over 5,000 linear feet of lightning protection was removed and re-installed.
This project was self-performed by Castro Roofing. Under Castro Roofing contractors’ scope of work the following companies contributed to the success of the SMU Owen Arts Center.

<table>
<thead>
<tr>
<th>Member Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOPREMA</td>
</tr>
<tr>
<td>GAF</td>
</tr>
<tr>
<td>Hunter Panel</td>
</tr>
<tr>
<td>TRUFAST Fasteners</td>
</tr>
<tr>
<td>3M</td>
</tr>
<tr>
<td>Oldham Lumber</td>
</tr>
<tr>
<td>Olympic Fasteners</td>
</tr>
<tr>
<td>Conner-Legrand</td>
</tr>
<tr>
<td>Maxim Skylights</td>
</tr>
<tr>
<td>Berridge Manufacturing</td>
</tr>
<tr>
<td>Miro Industries</td>
</tr>
</tbody>
</table>