

## Houston Food Bank: Ready to Serve Even More



*The Houston Food Bank's new warehouse and office facility is four times larger than the previous location.*

The Houston Food Bank has been serving Harris and 17 other southeast Texas counties since 1982. In their first year they delivered about one million pounds of food to community distribution programs. In 2010 the Food Bank dispersed 70 million pounds of food and fed 137,000 individuals each week through its charitable network of food pantries, shelters and nutrition programs. With an admirable goal of increasing its output to 120 million pounds of food annually by 2018, the Food Bank needed larger digs to help them reach their full potential.

The Food Bank purchased a warehouse facility from Sysco Foods, Inc. on the east side of Houston that fit the bill; it is four times larger than their previous location, and it has a warehouse area

to prep and house dry goods as well as a massive refrigerator and freezer to store perishable items. This nonprofit organization made one of the biggest leaps in its history when they decided to buy this facility, and each dollar spent in its renovation is being maximized to its fullest. They chose a "guaranteed maximum price" project delivery method so that all cost savings could be given back to the organization's cause.



*The building's exterior prior to renovation.*

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### CONSULTANTS' CORNER:

By: Ken Ollinger RRC, RRO, CCCA  
Austech Roof Consultants, Inc.



## When Roofs Become Much More Than Simple Roofs

A decade ago the desire of most knowledgeable owners, designers, and contractors was to "keep it off the roof." Finding that eliminating unnecessary foot traffic and equipment such as satellite dishes, antennas, piping, etc., was the first step in extending the roof's useful service life, great efforts were made to limit these things on, as well as penetrations through, the roof.

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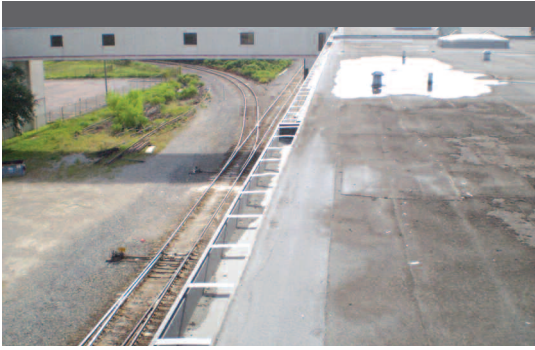
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Existing roof conditions prior to renovation.



Chamberlin workers removed the existing roof systems.



Chamberlin installed 10 inches of insulation atop Houston Food Bank's freezer and cooler.

General Contractor, Tellepsen Builders, selected Chamberlin as the roofing subcontractor for the 308,000 sq. ft. facility. "It was a no-brainer to hire Chamberlin for this project," said Tellepsen Quality Coordinator Bob Dulovics. "Not only were they the low bidder, but they have the expertise and infrastructure to meet the demands of this challenging project."

The integrity of the entire building envelope is a vital part of this food processing facility because of its large refrigerated areas and low tolerance for moisture intrusion. The existing roof systems atop the facility were a hodgepodge of EPDM, BUR and Modified Bitumen. Chamberlin's task was to remove the roofs and replace them with reliable, energy efficient systems.

The 70,000 sq. ft. freezer and cooler spaces came with their own set of challenges. The potential for moisture formation around a cold storage unit in Houston's hot, humid climate created a critical need to get the design right from the beginning to ensure airtight integrity. Chamberlin worked with the construction team to come up with design details to solve problems associated with the different internal temperatures of the large refrigerated coolers while considering moisture protection, energy efficiency and cost control.

"Chamberlin's attention to detail, making sure edges were properly sealed to keep water and air out, was very important," said Dulovics, "a lot of thought went into making a building envelope that looks and performs well."

The freezer had an EPDM black membrane system that was removed down to the metal deck, which was found to be rusting. The Chamberlin team painted and primed the deck with rust inhibitor and sealed all penetrations and perimeters with a vapor barrier to ensure its airtightness. Ten inches of insulation was adhered to the deck to meet the required R-55 thermal resistance for the freezer and refrigerator. A white, reflective Carlisle TPO single-ply membrane capped off the system to reduce heat transference for further energy efficiency.

A large portion of the existing roof over the 200,000 sq. ft. dry goods warehouse and truck facility had a Loadmaster-type deck, which can be tricky to work on during replacement. With a deck of this type, heavy materials or equipment on the roof could easily overload its capacity. So, Chamberlin was mindful to stage material and coordinate manpower to prevent any damage to the deck or injury to workers. The new roof system over the warehouse has a thermal resistance value of R-30 with five inches of roofing insulation.

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In recent history these simple roofs have evolved and the question now is this: "How can we use the roof surface effectively for other non-roof related functions?"

Roofs are now being used as the location for many functions that need to be designed and integrated into the roof system. Solar arrays, wind turbines, satellite antennas, commercial communication equipment and many other systems are now being installed on the roof. Roofs are also being designed and built to support various amenities such as garden or vegetated roofs, observation, recreation, and meeting areas. Restaurants use roof areas as additional outdoor dining areas, and the list of similar purposes goes on.

Other influences have been affecting roof design as well such as the U.S. Green Building Council's LEED program, the EPA's ENERGY

STAR program, energy codes, along with environmental regulations and ongoing code changes. While these issues and requirements are beneficial, they can create a confusing list of requirements that contractors, designers and owners must be aware of and incorporate in new or replacement roof systems. These influences and requirements are contributing to the need for a greater degree of coordination between the team members to result in a successful project.

**Project Planning**

The first step of a successful project is planning. Each roofing project undertaken is unique and will have special issues that must be addressed, but there is a plethora of typical items that must go into the planning and design phase to result in a successful project. The considerations can include understanding the code requirements, insurance, uplift resistance, drainage, roof function, deck type,

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This is unusual because, by code, the Food Bank could have gone with an assembly as low as R-17, but chose to upgrade for the comfort of their volunteers who work in the warehouse each day.

Part of the warehouse roof was a good candidate for a TPO overlay with new insulation rather than a full removal and replacement, saving the Food Bank as much as \$100,000 in additional expenses. Chamberlin also installed approximately 100 skylights and curbs over the warehouse and enclosed offices providing access to daylight and reducing the need for artificial lighting.



The existing skylights were in need of replacement.

Though there were significant safety concerns on the roof with a large number of existing skylights to be removed and the Loadmaster carrying capacity, Chamberlin was experienced and detailed oriented in preparing the safety plan.



“Safety challenges were easily overcome by Chamberlin due to their safety-minded culture,” said Dulovics, “we didn’t have to worry about them because they are very professional about what they do.”

Additional skylights were installed to provide natural sunlight and reduce the need for artificial lighting.

Fall protection hazards at the building perimeter and around skylights were identified and

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insulation, foot traffic, desired service life, annual maintenance, warranties, etc. While each one of these items can be regarded as a typical heading, each will have several subheadings and can be affected by the additional functions required of the roof.

When it is determined that the roof is being asked to be the platform for non-roof equipment or will be required to support some of the special functions described above, it is beneficial to begin a design checklist or matrix of those functions. The design considerations for each item can then be tracked. I suggest taking into account the design, typical construction, potential damage to the roof and maintenance of each non-roof item and then coordinate that information with the roof design as a whole.

One of the most important items of any successful project is constructability. At the end of the day the owner must have a project

that can be built within the anticipated budget, support the non-roof functions, meet all of the requirements and remain watertight for the anticipated service life of the roof. Constructability for each project typically means coordination of all the design requirements for the roof and roof top functions to determine that each works and does not create a harmful effect on the other.

**A Team Effort**

Construction of today’s roofs must be a team effort. Contractors, owners, manufacturers and designers must maintain an open relationship to construct today’s complicated roof systems incorporating the desired non-roof functions. Manufacturers of the roof mounted equipment are often a good source of information regarding the requirements for their particular systems. They also must be made aware of the end requirements necessary to make the roof

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“The Chamberlin Man here...”

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*Some people consider me a bit of a renaissance man. You know, the kind of guy who can do just about anything. Well, the aces at Chamberlin are the same – they know everything about keeping water out of your building from below-grade to the roof and everything in between. They caulk, they flash, they seal, they roof. They are **one source with many solutions.***

*Let us help you get a leg up on your next building envelope or garage repair project. It would be a pleasure to assist you.*

*Until next time, I’ll be seeing you around. ■*

**Want to know more about the Chamberlin Man? Visit his web site:**  
[www.chamberlinltd.com/the-chamberlin-man](http://www.chamberlinltd.com/the-chamberlin-man)

perform as desired for its anticipated service life while supporting their equipment. Roof membrane manufacturers are typically an excellent resource for warranty requirements, roof protection, code compliance and general roof installation information. Qualified and knowledgeable contractors are also a key element in successful projects. In today's market, contractors must be versed in a multitude of roof systems and also be knowledgeable about the non-roof systems that are to be incorporated. In addition, the roof system must be integrated with the entire building envelope, so contractors must be versed in the nuances of coordinating the roof and building envelope. It is beneficial to open the dialogue with qualified contractors early to discuss systems, constructability, requirements, maintenance and probable costs.

The entire team must understand the construction sequencing. Roofs are typically constructed to resist foot traffic and other abuse after construction, but when the roof is going to be used for other functions, the need for roof protection may be immediate to prevent damage during installation of other equipment and penetrations. The team must determine what the protection requirements are and who will provide the work.

A knowledgeable and cooperative team is also a great benefit during construction. While designers make every effort to provide a good set of complete details and construction documents, they cannot anticipate all of the sequencing and field modifications that may become necessary; therefore, the team approach is essential to make field decisions and provide modification documents in a timely manner as the need arises. Successful projects also benefit greatly from qualified construction observation. Qualified field observers commissioned by contractors, architects, engineers, owners and consultants become an integral part of the construction team.

## Commissioning

In the current construction process, commissioning has become a key element for many projects. While commissioning is typically accomplished for the entire project, for this discussion the concentration is on the roof. While accomplishing the punch-list review, the roof system designer should consider the entire roof assembly including non-roof

functions. When considering the roof as a platform, all of the items that affect the roof's performance should be noted even though correction of some of those items will likely not be accomplished by the roof installer. Noting items that need to be completed by trades other than the roof installer on the roof punch-list report will indicate the importance of coordination and how each function will affect the others.

The primary function of the roof is to keep the facility watertight. Failure of owners, designers and contractors to keep that basic function in mind while achieving the larger goals will result in long-term problems, expensive repairs and a potentially reduced service life for the roof. The days of the "keep it off the roof" approach are rapidly fading into the sunset. Today, the roof is a valuable contributor to the building's overall appearance as well as its environmental and energy performance. The team must "stay on top of the game" taking an all-encompassing approach to the roof design, construction, and management to result in watertight, long-term performance while supporting the other non-roof functions desired. ■

### REFERENCES:

Thomas W. Hutchinson, AIA, CSI, FRCI, RRC presentation at RCI Convention "Roof as a Platform"

Biasell, Natasha "Innovative Roofing Inspires Solar Energy Collaboration." RCI Interface July 2009

*Ken is a Senior Consultant with Austech Roof Consultants, Inc. in Austin, Texas. Austech was established in 1984 and has offices in both Austin and San Antonio. Austech specializes in roofing, waterproofing and building envelope technology. Austech provides Construction Documents, Reports, Moisture Surveys, Quality Control Monitoring, Design Reviews, and Expert Testimony on both new and retrofit projects. Ken can be reached at 512-443-7255 or ken@austechrci.com.*



*Following the "keep it off the roof" concept, this modified bitumen roof system has provided good service since 2003.*



*This roof is the platform for mechanical equipment, ducts, piping, vents, etc., all of which need to be considered during design.*



*This roof supports a ballasted tray system for a solar array. The roof was replaced prior to installation of the solar system.*



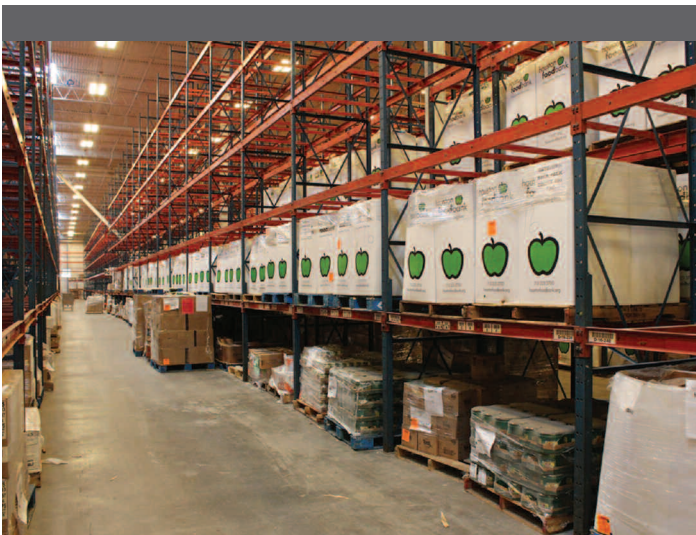
A portion of the completed roof and skylights.

discussed in Chamberlin's morning team meetings and regular site visits were performed by in-house safety inspectors.

The Houston Food Bank opened the doors of their new facility to donors and the community on September 23, 2011. On that day the warehouse was filled with over one million pounds of food donations.

"In its first quarter-century, Houston Food Bank has touched the lives of hundreds of thousands of individuals —

men, women and children from all walks of life and income levels," says Brian Greene, president/CEO of Houston Food Bank, "but, sadly, we must continue to work harder. As the economy fluctuates and people find themselves without work or are unable to make ends meet, they are turning to organizations such as the Houston Food Bank for help, many for the first time ever. This incredible new facility lessens our restrictions so our reach can extend further to help those in need." ■



The Houston Food Bank's 200,000 square foot dry goods warehouse.

## Employee Profile



**Bill Lawson**  
Operations Manager —  
Roofing & Sheet Metal  
Houston, TX

Bill is one of our favorite Yankees, and we are not talking about the baseball team because he is a diehard Mets fan. Bill began his career in the roofing business in New York straight out of high school and has been "living the roofer's dream" ever since he joined Chamberlin 14 years ago. On the field and off, Bill is a go-to guy who has a lot of knowledge to share from the school of hard knocks.

### Experience:

Bill started out in the roofing industry working alongside his brother as a laborer. He has come a long way since his first job tearing off cold tar pitch roofs and cleaning up the work site. After 10 years of roofing in New York, Bill moved to Houston where he applied at Chamberlin and was hired as a Foreman. With his competitive nature and desire to get results, Bill steadily worked his way through the ranks to his current position of Roofing Operations Manager for the Houston office. Bill has managed roofing teams on many notable projects including L'Auberge du Lac Hotel and Casino, U.T. M.D. Anderson's Administrative Support Building, Hess Tower, Texas Children's Hospital West Tower and the large roof replacements atop George H. W. Bush Intercontinental Airport's Terminal A and D.

### A Day in the Life:

Bill is a proactive problem solver and does whatever it takes to get the job done properly with a spirit of cooperation between all parties. That is why you will find him working with Chamberlin superintendents, project managers and estimators every day to set the course for each project. You will also see him meeting with general contractors and property owners to ensure his team is meeting and exceeding their expectations.

### Outlook:

"Project management is an integral part of customer service," said Bill, "there is no better way to demonstrate our commitment to deliver more than to perform well on the project from start to finish."

Bill's goal is to always listen, effectively communicate, be proactive and follow through on all commitments to clients and colleagues. That is a tall order, but Bill knows it is the only way to manage projects and earn future business. He takes pride in his profession and encourages his team to do the same.

Likewise, Bill is a natural teacher. "He is one of the most knowledgeable roofers in our industry," said Executive Vice President Art Canales, "and I have learned an awful lot from him over the years. Bill has a curious mind along with a focused attention to detail."

### Outside the Office:

Bill likes to spend time with his wife and daughter and participates in their many activities. He takes out the golf clubs for a few swings when he is not at a swim meet or soccer match. One of his favorite pastimes is making homemade pizza. Those in the Chamberlin Houston office are sometimes the lucky recipients of Bill's creations made with fresh vegetables from his father-in-law's backyard garden. He will let you have a slice as long as you stick around for a good razzing about that week's fantasy football results. ■

We asked Bill to choose his favorites from this random list of things as a way to get to know him a little better:

**LAWSON'S LIST**

Online	Offline
St. Patrick	St. Valentine
NFL	MLB
Pork	Beans
Led Zepplin	The Beatles

*If I had to choose just one.*

*Both!*

*It's my anniversary!*

# PROJECTS IN PROGRESS

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Roofing & Waterproofing

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### WESTMINSTER MANOR EXPANSION – Austin, TX

#### New Construction Waterproofing

Contract Amount: \$700,000 (approx.)  
Owner: Westminster Manor  
Architect: Perkins + Will  
Consultant: Wiss, Janney, Elstner & Associates, Inc.  
General Contractor: White Construction Company  
Scope of Work: Below-grade sheet waterproofing, air & vapor barrier, sheet metal flashing, joint sealants, site sealants, hot-applied waterproofing, cold fluid-applied waterproofing, traffic coating and expansion joints  
Project Description: Retirement and assisted living community

### LAREDO MEDICAL CENTER – Laredo, TX

#### Roof Replacement

Contract Amount: \$750,000 (approx.)  
Owner: Community Health Systems  
General Contractor: Chamberlin Roofing & Waterproofing  
Scope of Work: Remove existing roof and install new ballasted EPDM roof system and sheet metal flashing  
Project Description: Medical facility with multiple roof areas

### STONE OAK MOB – San Antonio, TX

#### Remedial Waterproofing

Contract Amount: \$200,000 (approx.)  
Owner: HCP Stone Oak MOB, LP  
Property Manager: Lincoln Harris CSG  
General Contractor: Chamberlin Roofing & Waterproofing  
Scope of Work: Wet glazing, sealant replacement, elastomeric coating, traffic coatings and coping repair  
Project Description: Seven story medical office building

### FOUR PARTNERS PLACE – THE UNIVERSITY OF OKLAHOMA – Norman, OK

#### New Construction Waterproofing

Contract Amount: \$150,000 (approx.)  
Owner: The Board of Regents of the University of Oklahoma  
Architect: The McKinney Partnership  
General Contractor: J.E. Dunn Construction Company  
Scope of Work: Bentonite waterproofing, joint sealants and site sealants  
Project Description: Office facility and data center

### NORTH RICHLAND HILLS RECREATION CENTER – North Richland Hills, TX

#### New Construction Roofing

Contract Amount: \$500,000 (approx.)  
Owner: City of North Richland Hills  
Architect: Brinkley Sargent Architects  
General Contractor: Byrne Construction Services  
Scope of Work: TPO roofing system, flashing and sheet metal  
Project Description: Community recreation center

### HOBBY AIRPORT ROADWAY – Houston, TX

#### Remedial Waterproofing

Contract Amount: \$2,000,000 (approx.)  
Owner: City of Houston  
Property Manager: Houston Airport System  
Architect: Lockwood, Andrews & Newman, Inc.  
Consultant: Wiss, Janney, Elstner & Associates, Inc.  
General Contractor: Clark Construction Group  
Scope of Work: Expansion joint assemblies, hot fluid-applied rubberized asphalt waterproofing, traffic coating and elastomeric coating  
Project Description: Passenger drop-off roadway

### OU SOONER CENTER HOUSING – Norman, OK

#### New Construction Waterproofing

Contract Amount: \$300,000 (approx.)  
Owner: The University of Oklahoma  
Architect: Studio Architecture, P.C.  
General Contractor: Flintco, Inc.  
Scope of Work: Air barrier and joint sealants  
Project Description: Student athletic housing

### JP MORGAN CHASE WEST UNIVERSITY – Lafayette, LA

#### Roof Replacement

Contract Amount: \$100,000 (approx.)  
Owner: JP Morgan Chase Real Estate  
Consultant: Alan Stevens Associates  
General Contractor: Chamberlin Roofing & Waterproofing  
Scope of Work: Remove existing roof and install new energy efficient Modified Bitumen roof system, sheet metal flashing, gravel guard and coping  
Project Description: Banking facility

### GEORGE W. BUSH PRESIDENTIAL CENTER – University Park, TX

#### New Construction Waterproofing

Contract Amount: \$200,000 (approx.)  
Owner: George W. Bush Presidential Center  
Architect: Robert AM Stern Architecture LLP  
General Contractor: Manhattan Construction  
Glass Contractor: Haley-Greer, Inc.  
Scope of Work: Joint sealants, flashing and insulation  
Project Description: Presidential Library and Institute

### CHRIST CHAPEL BIBLE CHURCH – Fort Worth, TX

#### New Construction Roofing

Contract Amount: \$400,000 (approx.)  
Owner: Christ Chapel Bible Church  
Architect: Martsof  
General Contractor: Linbeck Group  
Scope of Work: Modified Bitumen roofing system, sheet-metal and slate tile  
Project Description: Student ministry and music building

For a complete list of specialty contracting services, visit [www.chamberlinltd.com](http://www.chamberlinltd.com).

#### ROOFING/SHEET METAL

- Modified Bitumen/BUR
- Single ply
- Reflective coatings
- Vegetative roofing
- Metal standing seam
- Roof related sheet metal
- Tile

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- Joint sealants
- Membrane waterproofing
- Elastomeric wall coatings
- Traffic coatings
- Expansion joints
- Dampproofing/flashing
- Water repellents/metal flashing

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