

# UNIVERSITY OF CALIFORNIA, SANTA BARBARA

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SANTA BARBARA • SANTA CRUZ

OFFICE OF DESIGN & CONSTRUCTION SERVICES and PHYSICAL FACILITIES

CONTRACTING SERVICES

Building 439

Santa Barbara, California 93106-1030

Telephone (805) 893-3356

Fax (805) 893-8592

**SENT VIA:** ☐ FAX ON THIS DATE  
☐ HAND DELIVERY ON THIS DATE  
☒ FEDERAL EXPRESS ON THIS DATE  
☐ UNITED PARCEL SERVICE ON THIS DATE

HOLDERS OF PLANS AND SPECIFICATIONS:

Robertson Gymnasium Re-Roofing, Bldg. 533

Project No. FM100345S/101-78

**Addendum No. One**

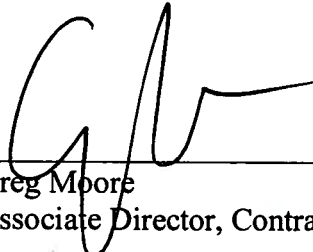
August 12, 2011

Enclosed is **ADDENDUM NO. 01** to the Construction Documents on the above-captioned project.

Bid date is changed from August 18, 2011 to **Friday, August 19, 2011** at 2:30 PM to be held at:

CONTRACTING SERVICES  
Facilities Management, Bldg. 439,  
Door #E, Reception Counter  
University of California, Santa Barbara  
Santa Barbara, CA 93106-1030.

Late arrivals shall be disqualified. Please allow time for unforeseen traffic delays, securing a parking permit and potential parking problems.

  
\_\_\_\_\_  
Greg Moore  
Associate Director, Contracting Services

ADDENDUM NUMBER 1

to the

CONSTRUCTION DOCUMENTS

August 12, 2011

GENERAL

The following changes, additions or deletions shall be made to the following document(s) as Indicated; all other conditions shall remain the same.

I. ADVERTISEMENT FOR BIDS

Item No.

1. Second page, first paragraph, sentence beginning with "Bid Deadline:....",  
CHANGE to read in it's entirety as follows:  
"Bid Deadline: Sealed bids must be received on or before **2:30 P.M. on**  
**Friday, August 19, 2011.** Sealed Bids will be received only at:  
Contracting Services, Facilities Management, Building #439, Door "E",  
Reception Counter, University of California, Santa Barbara, Santa  
Barbara, California 93106-1030."

II SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

Item No.

1. Number 4, CHANGE to read in it's entirety as follows:  
"Bids will be received on or before the Bid Deadline: **2:30 P.M.,**  
**Friday, August 19, 2011** and only at: Contracting Services,  
Facilities Management, Building #439, Door "E", Reception Counter,  
University of California, Santa Barbara, Santa Barbara, California  
93106-1030."

### III INFORMATION AVAILABLE TO BIDDERS

#### Item No.

1. Reports: Add the following:

The Garland Company Robertson Gymnasium Roof Report, 41 pages  
(2004)

### IV BID FORM

#### Item No.

1. Bid Form Replace in it's entirety with attached:

"REVISED BID FORM, REVISED PER ADDEMDUM ONE."  
Bids must received on the Revised Bid Form, Revised per  
Addendum One. Any bids received not on the revised form will be  
rejected.

### V SPECIFICATIONS

#### Item No.

1. Section 01010 - "Summary of Work"; 1.01 Work Required by the Contract Documents, Revise paragraph A.1 to read:

Demolition and disposal of all components of the existing built-up roofing system, including all insulation, flashing, counter flashing and copings.

#### Item No.

2. Section 01030 - "Alternates"; 2.01 Description of Alternates, Bid Alternate 1, Revise paragraph B.1 to read:

The 60 day Contract Time will be extended to an 85 day Contract Time if this Alternate is accepted by the University.

#### Item No.

3. Section 07545 - "Thermoplastic Membrane Roofing", 2.02 Materials Revise paragraph 4 to read:

Main Field Sheet – 80 mils thermoplastic membrane with glass fiber reinforcement. Color to be white and be from manufacturer's standard palette.

Item No.

4. Section 07545 - "Thermoplastic Membrane Roofing", 2.07  
Insulation/Overlayment  
**Revise paragraph C to read:**

**Insulation:**

A rigid poly-isocyanurate foam insulation with black mat facers. Available in 4 ft x 4 ft (1.2 m x 1.2 m) or 4 ft x 8 ft (1.2 m x 2.4 m) sizes and 2 ½" thickness. Provide details for a complete roof system.

Item No.

5. Section 07545 - "Thermoplastic Membrane Roofing", 3.03 Insulation and  
Coverboard Installation  
**Revise paragraph G to read:**

Mechanically fasten insulation and Dens Deck to substrate with fasteners and fastener spacing as specified by the roofing material manufacturer and which satisfy the installation standards listed in paragraph 1.04 of this specification section (07545).

Item No.

6. Section 07545 - "Thermoplastic Membrane Roofing", 3.03 Insulation and  
Coverboard Installation  
**Delete paragraph "H" in its entirety. ("H" consists of three paragraphs)**

END OF ADDENDUM NO. 1

REVISED BID FORM

REVISED PER ADDENDUM NUMBER ONE

FOR: Robertson Gymnasium Re-Roofing, Bldg. 533

FM100345S/101-78

UNIVERSITY OF CALIFORNIA  
SANTA BARBARA  
SANTA BARBARA, CALIFORNIA

July 2011

BID TO: University of California, Santa Barbara  
Facilities Management, Building 439  
Door E, Reception Counter  
Santa Barbara, CA 93106  
(805)893-3298

BID FROM:

\_\_\_\_\_  
(Name of Bidder)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City)

\_\_\_\_\_  
(State)

\_\_\_\_\_  
(Zip)

\_\_\_\_\_  
(Telephone Number)

\_\_\_\_\_  
(Fax Number)

\_\_\_\_\_  
(Email Address)

DATE BID SUBMITTED

\_\_\_\_\_  
(Date)

**Note:** All portions of this Bid Form must be completed and the Bid Form must be signed before the Bid is submitted. Failure to do so may result in the BID being rejected as non-responsive.

**1.0 BIDDER'S REPRESENTATIONS**

Bidder, represents that a) Bidder and all Subcontractors, regardless of tier, has the appropriate current and active Contractor's licenses required by the State of California and the Bidding Documents; b) it has carefully read and examined the Bidding Documents for the proposed Work on this Project; c) it has examined the site of the proposed Work and all Information Available to Bidders; d) it has become familiar with all the conditions related to the proposed Work, including the availability of labor, materials, and equipment. Bidder hereby offers to furnish all labor, materials, equipment, tools, transportation, and services necessary to complete the proposed Work on this Project in accordance with the Contract Documents for the sums quoted. Bidder further agrees that it will not withdraw its Bid within 60 days after the Bid Deadline, and that, if it is selected as the apparent lowest responsive and responsible Bidder, that it will, within 10 days after receipt of notice of selection, sign and deliver to University the Agreement in triplicate and furnish to University all items required by the Bidding Documents. If awarded the Contract, Bidder agrees to complete the proposed Work within Sixty (60) calendar days after the date of commencement specified in the Notice to Proceed.

**2.0 ADDENDA**

Bidder acknowledges that it is Bidder's responsibility to ascertain whether any Addenda have been issued and if so, to obtain copies of such Addenda from University's facility at the appropriate address stated on Page 1 of this Bid Form. Bidder therefore agrees to be bound by all Addenda that has been issued for this Bid.

**3.0 NOT USED**

**4.0 LUMP SUM BASE BID**

\$   ,    ,    .    
(Place Figures in appropriate boxes)

**5.0 SELECTION OF APPARENT LOW BIDDER**

Refer to the Instructions to Bidders for selection of apparent low bidder.

**6.0 NOT USED**

**7.0 DAILY RATE OF COMPENSATION FOR COMPENSABLE DELAYS (Used As Basis For Award)**

Bidder shall determine and provide below the daily rate of compensation for any Compensable Delay caused by University at any time during the performance of the Work:

\$  ,  .  x 30 **MULTIPLIER**  
(Place Amount in Figures in appropriate boxes)

University will perform the extension of the daily rate times the multiplier.

The daily rate shown above will be the total amount of Contractor entitlement for each day of Compensable Delay caused by University at any time during the performance of the Work and shall constitute payment in full for all delay costs, direct or indirect (including, without limitation, compensation for all extended home office overhead and extended general conditions), of the Contractor and all subcontractors, suppliers, persons, and entities under or claiming through Contractor on the Project. The number of days of Compensable Delay shown as a "multiplier" above is not intended as an estimate of the number of days of Compensable Delay anticipated by the University. The University will pay the daily rate of compensation only for the actual number of days of Compensable Delay, as defined in the General Conditions; the actual number of days of Compensable Delay may be greater or lesser than the "multiplier" shown above.

**8.0 ALTERNATES**

In order for a Bid to be responsive, Bidder must submit an additive bid, a deductive bid, or a "no change" bid, for each Alternate listed below. Bidder shall mark the additive, deductive, or "no change" box for each Alternate. The failure to do so shall result in the Bid being rejected as non-responsive. The failure to quote an amount, unless the bidder marks the "no change" box, will result in the bid being rejected as non-responsive.

The Contract Time will change by the number of days, if any, specified for each accepted Alternate.

Alternate No. 1

Description: Provide adhered thermoplastic membrane roof as called for on sheet A2.1 and A2.2 as Roof B, Roof C, Roof D and Roof F specified in section 07545 Fully Adhered PVC Thermoplastic Membrane Roofing.

as specified in Section 01030

(Alternate Specification Section Number)

Bid for Alternate No. 1

Indicate by marking only **ONE** of the three boxes ("Add," "Deduct," or "No Change") and state the amount, if "Add" or "Deduct" are selected, by placing figures in the corresponding boxes.

☐ Add      \$  ,  .

☐ Deduct      \$  ,  .

☐ No Change      Bidder will perform alternate without change to Contract Sum.

If this Alternate is accepted, the Contract Time will be extended by 25 days.

University reserves the right to accept any Alternate(s) for 30 calendar days after the date University signs the Agreement.



**Bidder will use Subcontractors for the Work:**

If yes, provide in the spaces below (a) the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the state of California who, under subcontract to the prime contractor, specifically fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of 1/2 of 1 percent of the prime contractor's total bid, (b) the portion of the work which will be done by each subcontractor. The prime contractor shall list only one subcontractor for each such portion as is defined by the prime contractor in its bid.

[illegible]

(Note: Add additional pages if required.)

The information below must be provided for all changes in first-tier Subcontractors if University selects Alternates. List changes in Subcontractors only for those portions of the Work valued in excess of 1/2 of 1% of Bidder's Total Bid.

[illegible]

(Note: Add additional pages if required.)

## 11.0 BIDDER INFORMATION

### TYPE OF ORGANIZATION:

\_\_\_\_\_  
(Corporation, Partnership, Individual, Joint Venture, etc.)

- IF A CORPORATION, THE CORPORATION IS ORGANIZED UNDER THE LAWS OF THE STATE OF \_\_\_\_\_  
\_\_\_\_\_.

### NAME OF PRESIDENT OF THE CORPORATION:

\_\_\_\_\_  
(Insert Name)

### NAME OF SECRETARY OF THE CORPORATION:

\_\_\_\_\_  
(Insert Name)

- IF A PARTNERSHIP, NAMES OF ALL GENERAL PARTNERS:

\_\_\_\_\_  
(Insert Names)  
\_\_\_\_\_  
\_\_\_\_\_

### CALIFORNIA CONTRACTORS LICENSE(S):

\_\_\_\_\_  
(Classification)

\_\_\_\_\_  
(License Number)

\_\_\_\_\_  
(Expiration Date)

(For Joint Venture, list Joint Venture's license and licenses for all Joint Venture partners.)

### EMPLOYER IDENTIFICATION NUMBER (EIN):

## 12.0 REQUIRED COMPLETED ATTACHMENTS

The following documents are submitted with and made a condition of this Bid:

1. Bid Security in the form of \_\_\_\_\_  
(Bid Bond or Certified Check)

**13.0 DECLARATION**

I, \_\_\_\_\_, hereby declare that I am  
(Printed Name)  
the \_\_\_\_\_ of \_\_\_\_\_  
(Title) (Name of Bidder)

submitting this Bid Form; that I am duly authorized to execute this Bid Form on behalf of Bidder;  
and that all information set forth in this Bid Form and all attachments hereto are, to the best of my  
knowledge, true, accurate, and complete as of its submission date.

I declare, under penalty of perjury, that the foregoing is true and correct and that this declaration  
was

executed at: \_\_\_\_\_  
(Name of City if within a City, otherwise Name of County)

in the State of \_\_\_\_\_,

on \_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature)

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That we, \_\_\_\_\_,  
as Principal, and \_\_\_\_\_, as Surety, are held and firmly bound unto THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, hereinafter called THE REGENTS, in the sum of ten percent (10%) of the Lump Sum Base Bid amount for payment of which in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT, WHEREAS, Principal has submitted a Bid for the work described as follows:

Robertson Gymnasium Re-Roofing, Bldg. 533

FM100345S/101-78

NOW, THEREFORE, if Principal shall not withdraw said Bid within the time period specified after the Bid Deadline, as defined in the Bidding Documents, or within sixty (60) days after the Bid Deadline if no time period be specified, and, if selected as the apparent lowest responsible Bidder, Principal shall, within the time period specified in the Bidding Documents, do the following:

- (1) Enter into a written agreement, in the prescribed form, in accordance with the Bid.
- (2) File two bonds with THE REGENTS, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by the Bidding Documents.
- (3) Furnish certificates of insurance and all other items as required by the Bidding Documents.

In the event of the withdrawal of said Bid within the time period specified, or within sixty (60) days if no time period be specified, or the disqualification of said Bid due to failure of Principal to enter into such agreement and furnish such bonds, certificates of insurance, and all other items as required by the Bidding Documents, if Principal shall pay to THE REGENTS an amount equal to the difference, not to exceed the amount hereof, between the amount specified in said Bid and such larger amount for which THE REGENTS procure the required work covered by said Bid, if the latter be in excess of the former, then this obligation shall be null and void, otherwise to remain in full force and effect.

In the event suit is brought upon this bond by THE REGENTS, Surety shall pay reasonable attorneys' fees and costs incurred by THE REGENTS in such suit.

IN WITNESS WHEREOF, we have hereunto set our hands this \_\_\_\_ day of \_\_\_\_\_, 20

Principal

Surety

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address for Notices:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

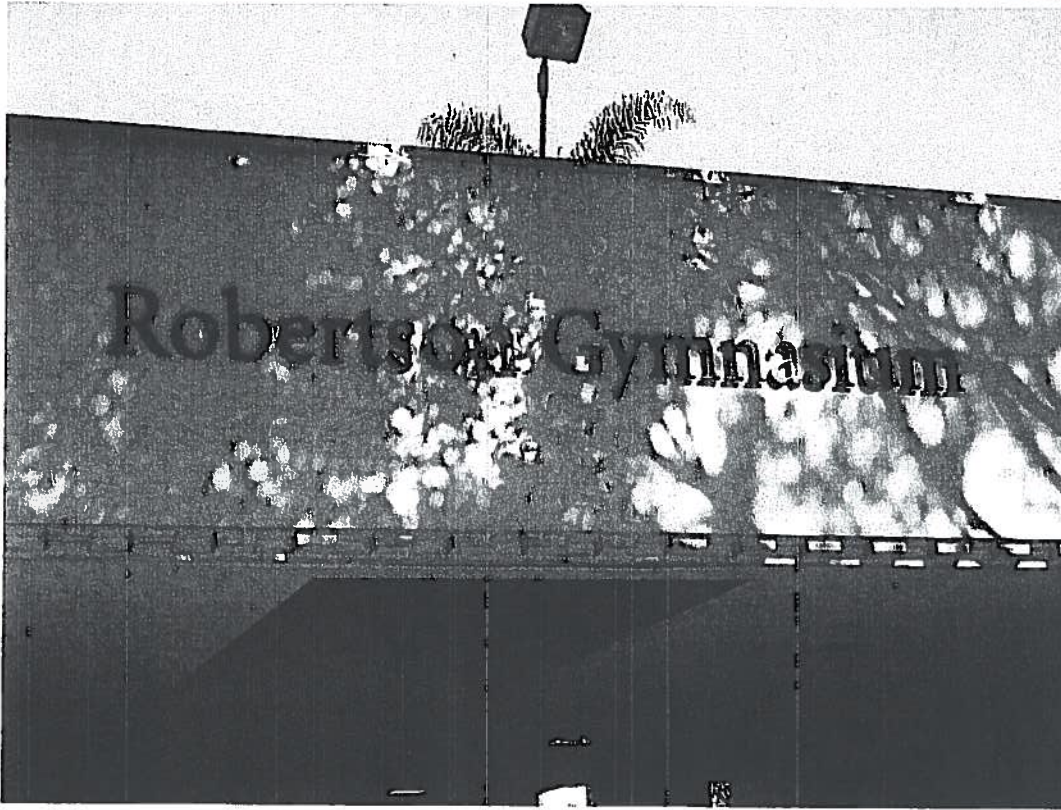
NOTE: Notary acknowledgement for Surety and Surety's Power of Attorney must be attached.

## Facility Summary

### Facility Details

<b>Tent ID:</b>	<b>University of California Santa Barbara</b>	<b>Facility ID:</b>	<b>533 Robertson Gymnasium</b>
<b>Square Feet (entire facility):</b>	<b>73,600</b>	<b>Location:</b>	<b>Ocean Road</b>
<b>Facility Contact:</b>	<b>Bob Wright</b>	<b>Contact Email:</b>	<b>robert.wright@pf.ucsb.edu</b>
<b>Contact Title:</b>	<b>Physical Plant Superintendent</b>	<b>Contact Phone:</b>	<b>805-893-2662</b>
<b>Fax Number:</b>	<b>805-671-2642</b>	<b>Last Inspection:</b>	<b>NA</b>

### Facility Photo

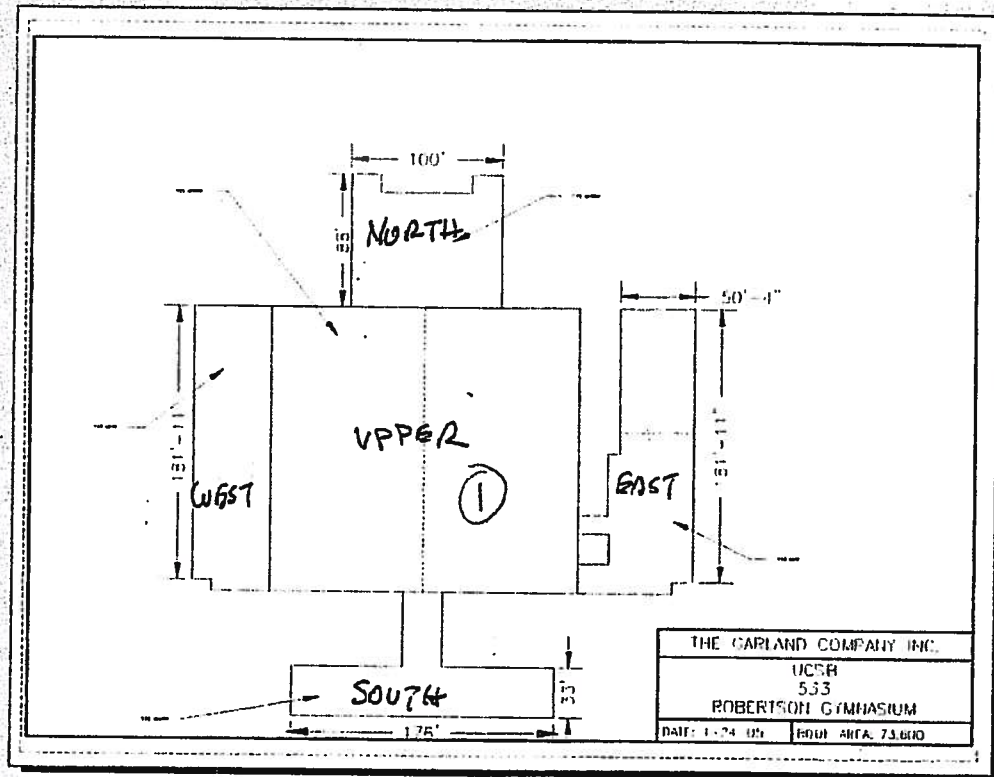


### Photo Notes

Building 533 Robertson Gymnasium.



# 533 Robertson Gymnasium Facility Drawing



## Drawing Notes

The roof has five sections.

# Construction Details

## General Information

<b>Client Name:</b>	University of California Santa Barbara	<b>Facility Name:</b>	533 Robertson Gymnasium
<b>Roof Section:</b>	East	<b>Square Feet:</b>	7,300

## Contact Information

<b>Architect:</b>	NA	<b>Architect Email:</b>	NA
<b>Roofing Contractor:</b>	NA	<b>Contractor Email:</b>	NA

## System Information

<b>Date Installed:</b>	UNKNOWN	<b>Warranty:</b>	No
<b># of Roofs:</b>	One	<b>Roof Deck:</b>	Steel/Metal Deck
<b>Slope Dimension:</b>	1/4:12	<b>Vapor Retarder:</b>	None
<b>System Type:</b>	B.U.R.		

<b>Felt:</b>	Polyester	<b>Total System Piles:</b>	Three
<b>Surfacing:</b>	Flood & Gravel	<b>Membrane Attachment:</b>	Hot Asphalt

### Insulation - Layer 1

<b>Type:</b>	Perlite	<b>R-Value:</b>	2.78
<b>Attachment:</b>	Hot Asphalt	<b>Thickness:</b>	2"

### Insulation - Layer 2

<b>Type:</b>	NA	<b>R-Value:</b>	NA
<b>Attachment:</b>	NA	<b>Thickness:</b>	NA

## Perimeter Details

<b>Perimeter Type:</b>	Parapet Wall	<b>Projection Flashing Material:</b>	Built-up Roof
<b>Parapet Wall Materials:</b>	Poured In Place Concrete	<b>Coping Cap:</b>	Metal
<b>Drain System:</b>	Internal Drains	<b>Roof Access:</b>	Penthouse



# Facility Photo Confirmation

Client Name: University of California Santa Barbara

Facility Name: 533 Robertson Gymnasium

Location: East

Photo Page #: 1

Photo Box

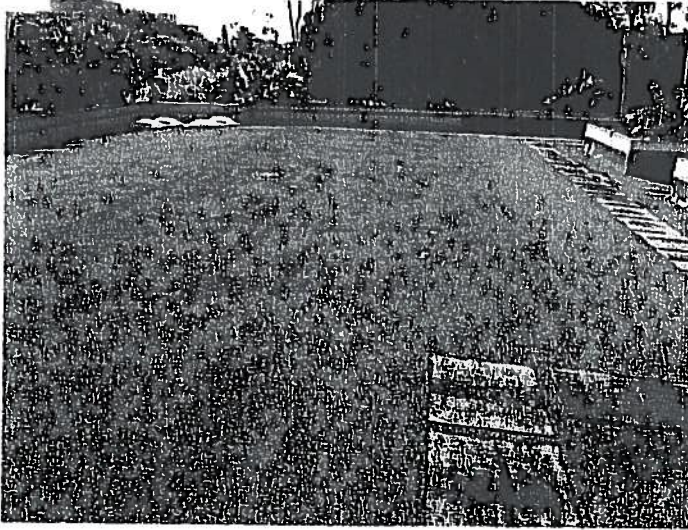


Photo Notes

View of the roof section.

Photo Box

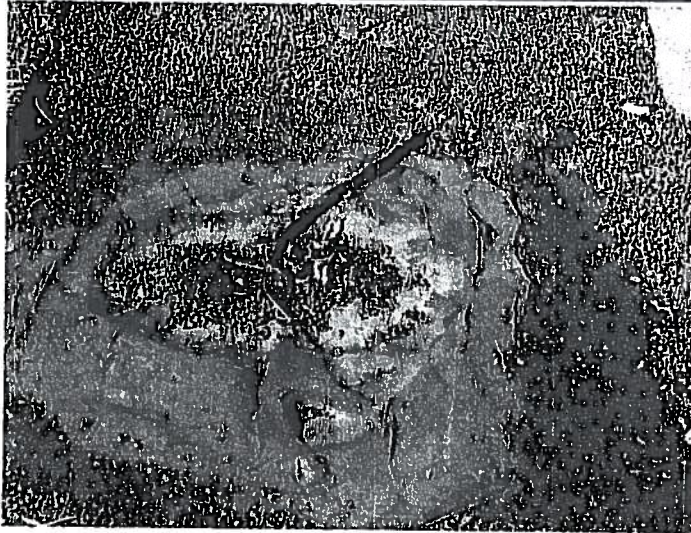


Photo Notes

There was a large failure in the system that has been patched and still a trouble spot.



# Facility Photo Confirmation

Client Name: University of California Santa Barbara

Facility Name: 533 Robertson Gymnasium

Location: East

Photo Page #: 2

Photo Box

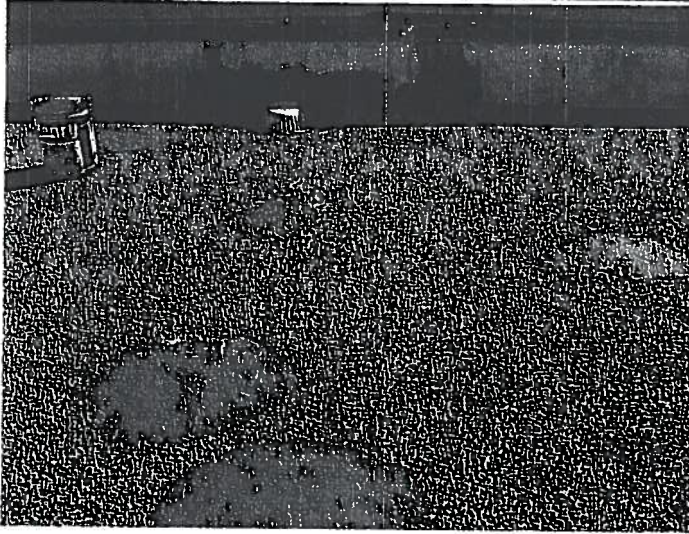


Photo Notes

any patched in the field of the roof where blisters and seam splits occurred. A can roof mastic near the parapet wall where there are several failures in the base flashing. Once again caused by differential move as this roof system did NOT allow for movement of any kind.

Photo Box

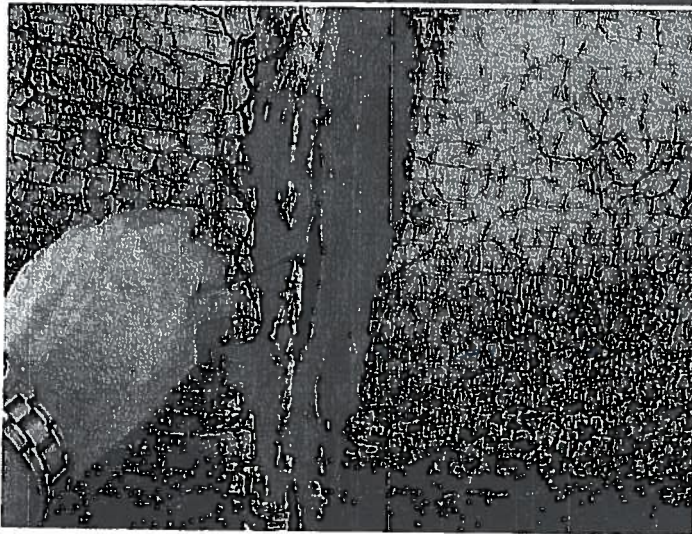


Photo Notes

# Facility Photo Confirmation

Client Name: University of California Santa Barbara

Facility Name: 533 Robertson Gymnasium

Location: East

Photo Page #: 3

Photo Box



Photo Notes

Another hole in the base flashing where many repair attempts have already been made.

Photo Box

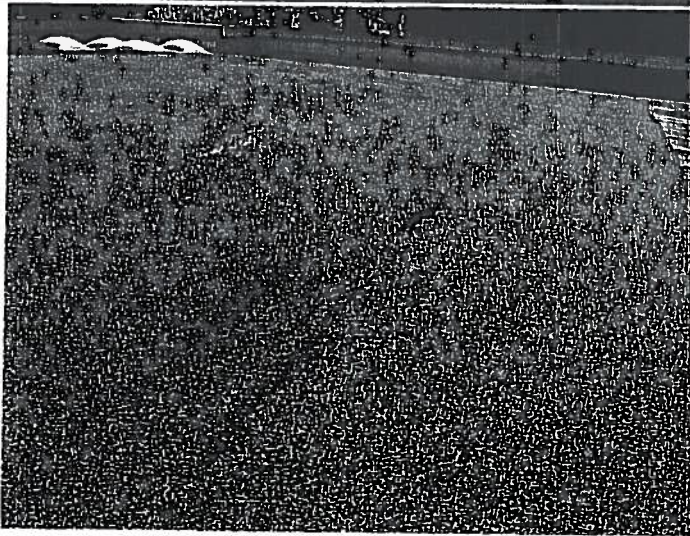


Photo Notes

view of blisters and seam splits that are evident of a failed roof.



## Solutions Options

**Client Name:** University of California Santa Barbara  
**of Section:** East

**Facility Name:** 533 Robertson Gymnasium  
**Square Footage:** 7300

**Estimated Cost of Solution Chosen:** \$71,000.00

**Recommended Action Year:** Year 2: 2006

**Recommended Solution:** Replace

### Repair Options

**Cost Estimate:** \$300.00

#### Repair Option 1

**Expected Life:** 2 Years

**Cost Estimate:** \$300.00

Repair the major problems at the flashings that are the most obvious point of moisture entry, with a 3 course application of Garla-Flex, high quality flexible rubberized mastic and Garmesh, an SBS coated woven fiberglass reinforcing scrim. Apply Garla-Brite, a non-fiberglass aluminum reflective coating to protect the repairs for U.V. rays.

### Replace Options

**Cost Estimate** \$71,000.00

#### Replace Option 1

**Expected Life:** 30-40 Years

**Cost Estimate:** \$71,000.00

**R-Mer Lite Flat Seam Free Floating Metal Roof**

Replace the existing failed roofing system with a flat seam metal R-MER Lite free floating roofing system. This system is designed to allow the unrestricted movement of the projections, walls and penetrations throughout the entire roof area. The R-Mer Lite insulated steel roofing system is setting the standards for low sloped metal roofing. R-Mer Lite's baked polymeric steel membrane resists corrosion and provides unequalled protection from searing sun, torrential rains, HAIL, and high winds. The System is designed to expand and contract with changes in temperature. The patterned surface gives the steel flexibility, ensuring that movement does not stress on the joints. The system is environmentally friendly and is installed without disruptions and hazards. The System is virtually maintenance free. Moreover, the tough surface resists corrosion, and will not split or crack. The Ridged board insulation designed into this system adds additional R-Value for increased energy savings. This system's 30-35 year life cycle cost provides a very cost effective system. This system has a 40 year life cycle, is 90% recyclable, is part of the California Cool Roofing Program, complies with the new Title 24 requirements due in October 2005 for low slope roofing and comes with a 30+ year warranty.

#### Replace Option 2

**Expected Life:** 25 Years

**Cost Estimate:** \$80,000.00

#### **COLD APPLIED MODIFIED SYSTEM:**

This is a low odor, VOC compliant SBS/SIS/SEBS modified built up roof system that will provide thirty five (35) to 40 years of trouble free waterproofing without the odor or inconvenience to the sensitive teachers inside the building that the hot applied system may cause with air intakes, smoke and other features of the hot applied system. The cold applied system inner ply waterproofing adhesive is SEBS polymer modified so it also has better low temperature flexibility and much more elasticity than conventional asphalt has.

This option includes complete removal of the existing roof system and all of its components down to the structural wood decking. Any deteriorated wood decking will be replaced with new decking, a modified base sheet will be mechanically attached to the wood decking in compliance with Factory Mutual 1-90 wind uplift requirements, a new insulation system will be fully adhered to the modified base sheet in compliance with Factory Mutual 1-90 wind uplift requirements. The new insulation system will be a HIGH R Value, energy saving insulation. Once the insulation is installed, then a new modified built up roof system would be installed. An SBS/SIS modified system and cap sheet shall be installed, the sheet has maximum tensile & tear strength, and maximum elongation. High R-value tapered insulation lowers the interior building temperature, but raises the roof top temperature, this creates tremendous thermal shock, and thermal movement, without an elastomeric and high strength roof system, the roof will split and deteriorate pre-maturely.

The difference in the polymers is important, conventional SBS cap sheets, become brittle with exposure to UV rays and standing water, an SBS/SIS modified cap sheet will hold up to the elements much better, because the cross linking of Styrene Isoprene Styrene polymer will insure that the sheet will remain flexible and will not dry out and split during freeze thaw cycles, also a high performance SBS/SIS modified cap sheet will handle the foot traffic on these roofs better and last up to 30 to 40 years (depending on the amount of maintenance and the amount of abuse) Conventional SBS modified cap sheets last between 7 and 12 years depending on the amount of foot traffic, and the amount of standing water, and the quality of the sheet. The system would include two piles of SBS modified base sheets, adhered in SEBS modified adhesive, then the cap sheet would be adhered to the underlying layers with the same SEBS modified adhesive. A final top coat of Pyramic, a bright white highly reflective coating, would then be applied. This system is part of the California Cool Roofing Program, complies with the new Title 24 requirements due in October 2005 for low slope roofing and comes with a 30+ year warranty.

All new modified flashings would be installed, and then a new free-floating metal edge coping system would be installed. This system is VOC compliant and will not cause any odors to interrupt the employees or visitors to the gymnasium.

**NOTE: THE GARLAND COMPANY, WILL PROVIDE DAILY INSPECTIONS DURING THE ENTIRE INSTALLATION OF THE PROJECT, AND PROVIDE UCSB WITH DIGITAL PHOTOGRAPHIC REPORTS OF THE PROJECT IN PROGRESS. IN ADDITION, THE PROGRESS PHOTOS WILL BE AVAILABLE WEEKLY ELECTRONICALLY VIA THE INTERNET WITH A PASSWORD. ONCE THE ROOF INSTALLATION IS COMPLETE THEN GARLAND WILL ISSUE THE LONG TERM NO COLLAR LIMIT (NDL) GUARANTEE, AND GARLAND WILL PROVIDE ANNUAL INSPECTIONS OF THE ROOF FOR THE LIFE OF THE WARRANTY. MAINTENANCE RECOMMENDATIONS WILL BE ISSUED ANNUALLY TO THE MAINTENANCE PERSONNEL, ALL OF THESE SERVICES WILL BE PROVIDED A NO CHARGE TO UCSB AS WE HAVE DONE WITH MANY OTHER SCHOOL DISTRICTS AND UNIVERSITIES.**

There are 4 divisions of roofing projects, 1- proper design and good quality specifications, 2- good quality high performance products, 3- good quality labor and experienced installation technicians, 4- daily "work in progress" inspections. If one of these four are eliminated then there is a 25% risk of failure on the project, if 2 are eliminated then there is a 50% risk, and so on. Garland includes all 4 of these important divisions and insures 100% success!

*Expected Life is an average, assuming that a proper evaluation & maintenance program is performed on a yearly basis.*

# Construction Details

## General Information

<b>Client Name:</b>	University of California Santa Barbara	<b>Facility Name:</b>	533 Robertson Gymnasium
<b>Roof Section:</b>	North	<b>Square Feet:</b>	8,100

## Contact Information

<b>Architect:</b>	NA	<b>Architect Email:</b>	NA
<b>Roofing Contractor:</b>	NA	<b>Contractor Email:</b>	NA

## System Information

<b>Date Installed:</b>	UNKNOWN	<b>Warranty:</b>	No
<b># of Roofs:</b>	One	<b>Roof Deck:</b>	Steel/Metal Deck
<b>Slope Dimension:</b>	1/4:12	<b>Vapor Retarder:</b>	None
<b>System Type:</b>	B.U.R.		

<b>Felt:</b>	Polyester	<b>Total System Piles:</b>	Three
<b>Surfacing:</b>	Flood & Gravel	<b>Membrane Attachment:</b>	Hot Asphalt

### Insulation - Layer 1

<b>Type:</b>	Perlite	<b>R-Value:</b>	2.78
<b>Attachment:</b>	Hot Asphalt	<b>Thickness:</b>	2"

### Insulation - Layer 2

<b>Type:</b>	NA	<b>R-Value:</b>	NA
<b>Attachment:</b>	NA	<b>Thickness:</b>	NA

## Perimeter Details

<b>Perimeter Type:</b>	Parapet Wall	<b>Projection Flashing Material:</b>	Built-up Roof
<b>Parapet Wall Materials:</b>	Poured In Place Concrete	<b>Coping Cap:</b>	None
<b>Drain System:</b>	Internal Drains	<b>Roof Access:</b>	Attached Ladder

## Construction Notes

The upper section consist of one built-up roof over a metal deck with perlite insulation. A built-up roofing system is comprised of alternating layers of asphalt and felts, followed by a flood coat of asphalt. The asphalt is the waterproofing agent, and the felts provide the strength to hold the system together.



# Inspection Report

## Inspection Details

Name:	University of California Santa Barbara	Facility Name:	533 Robertson Gymnasium
Roof Section:	North	Inspected By:	Patrick Murphy
Inspection Date:	02/02/2005	Square Feet:	8,100
Inspection Type:	Core Analysis	Age of Roof:	NA
Core Data Available:	Yes	Deck:	Good
Leakage:	Yes	Insulation:	Dry

## Findings / Notes

**Perimeter Rating:** Failed

**Notes:** The perimeter has many areas where the reglets joints and counter flashings have completely failed. Some of those areas have been repaired and patched only to have the reglet give way. There are large gaps that expose the building to direct water entry when it rains.

## Field Ratings

**Field Rating:** Failed

**Notes:** The field of the roof is where the most severe problems lie. With too many blisters to count allowing moisture into the roof and the various failed repairs also allow water entry. The inter plies are dried out and pulling apart. There are multiple seam splits, poor gravel adhesion that have led to this roof section failing. There have been several patches on this roof section where water is getting into the building and many of those patches have failed. Air quality of the students housed below is very important and this roof should be replaced in the near future before any water damage occurs.

## Drains & Gutters Ratings

**Drains & Gutters Rating:** r Poor

**Notes:** Drainage is questionable because much of the water is seeping into the system. The large amount of the flooded gravel is also impeding drainage.

## Overall Evaluation

**Overall Roof Evaluation:** The roof is at the end of its useful life. There are severe perimeter issues including the differential movement, split seams and failed reglet joints and counter flashings.. The field of the roof is where the most severe problems lie. With too many blisters to count allowing moisture into the roof and the various failed repairs also allow water entry. The inter plies are dried out and pulling apart. The field of the roof has failed and cannot be restored. Air quality of the students housed below is very important and this roof should be replaced in the near future.

**Overall Roof Condition:** Failed

**Recommendation:** Replace



# Facility Photo Confirmation

Client Name: University of California Santa Barbara

Facility Name: 533 Robertson Gymnasium

Location: North

Photo Page #: 1

Photo Box



Photo Notes

View of the wide open roof section on the north side.

Photo Box

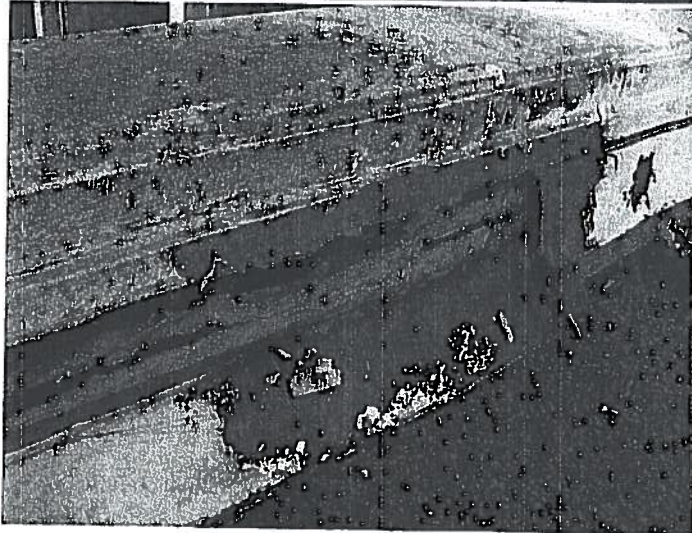


Photo Notes

The reglet joint has failed and pulled away from the parapet wall exposing the rolled up base flashing.

# Facility Photo Confirmation

Client Name: University of California Santa Barbara

Facility Name: 533 Robertson Gymnasium

Location: North

Photo Page #: 2

Photo Box

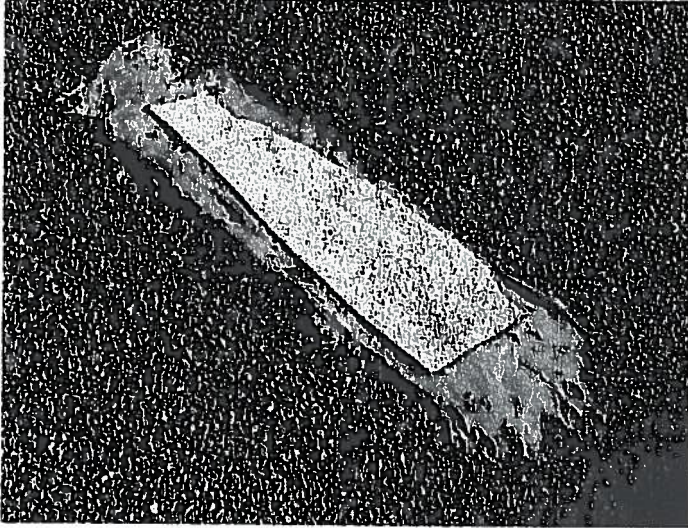


Photo Notes

Location where there was a leak that was patched. The roofing mastic used has since dried out.

Photo Box

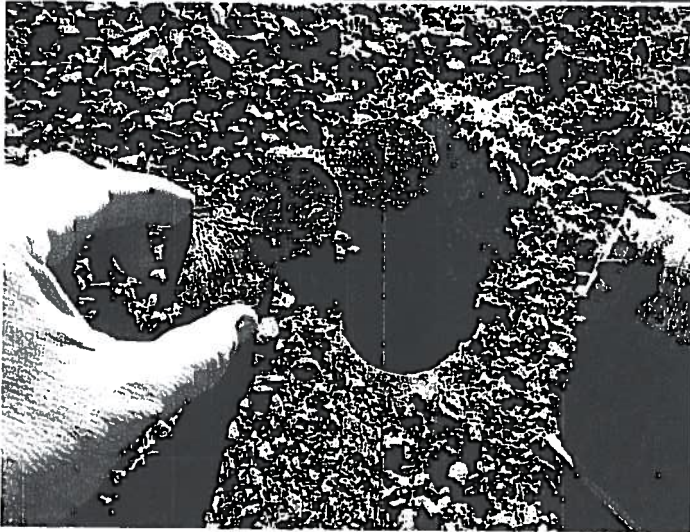


Photo Notes

Core sample shows how badly the inter piles have dried out and pulled apart.



# Facility Photo Confirmation

Client Name: University of California Santa Barbara  
Location: North

Facility Name: 533 Robertson Gymnasium  
Photo Page #: 3

Photo Box

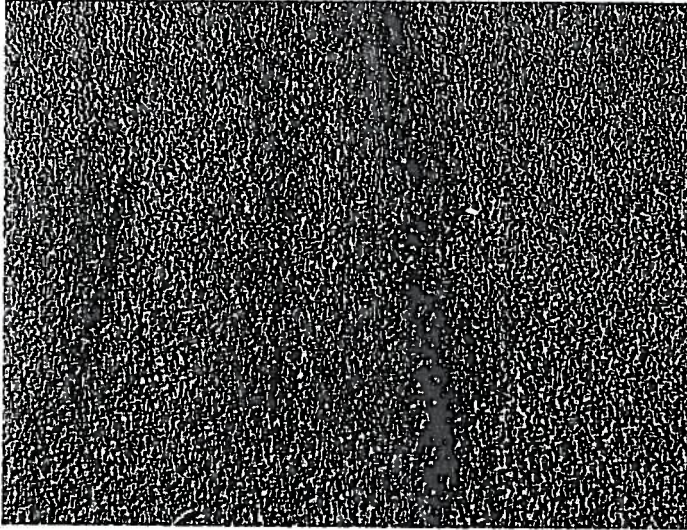


Photo Notes

Seams splits and blisters on the roof section.

Photo Box



Photo Notes

Another section where the reglet failed and the counter flashing has completely fallen off.

## Solutions Options

Client Name: University of California Santa Barbara  
of Section: North

Facility Name: 533 Robertson Gymnasium  
Square Footage: 8100

**Estimated Cost of Solution Chosen: \$80,000.00**

**Recommended Action Year: Year 2: 2006**

**Recommended Solution: Replace**

### Repair Options

Cost Estimate: \$300.00

#### Repair Option 1

Expected Life: 2 Years

Cost Estimate: \$300.00

Repair the failed reglet joints with Tuff Stuff, a moisture-curing, single component non-sag polyurethane sealant, to seal the gaps in the seams and reset the counter flashings..

### Restore Options

Cost Estimate \$0.00

#### Restore Option 1

Expected Life: Years

Cost Estimate:

### Replace Options

Cost Estimate \$80,000.00

#### Replace Option 1

Expected Life: 30-40 Years

Cost Estimate: \$80,000.00



## R-Mer Lite Flat Seam Free Floating Metal Roof

Replace the existing failed roofing system with a flat seam metal R-MER Lite free floating roofing system. This system is designed to allow the unrestricted movement of the projections, walls and penetrations throughout the entire roof area. The R-Mer Lite insulated steel roofing system is setting the standards for low sloped metal roofing. R-Mer Lite's baked polymeric steel membrane resists corrosion and provides unequalled protection from searing sun, torrential rains, HAIL, and high winds. The System is designed to expand and contract with changes in temperature. The patterned surface gives the steel flexibility, ensuring that movement does not stress on the joints. The system is environmentally friendly and is installed without disruptions and hazards. The System is virtually maintenance free. Moreover, the tough surface resists corrosion, and will not split or crack. The Ridged board insulation designed into this system adds additional R-Value for increased energy savings. This system's 30-35 year life cycle cost provides a very cost effective system. This system has a 40 year life cycle, is 90% recyclable, is part of the California Cool Roofing Program, complies with the new Title 24 requirements due in October 2005 for low slope roofing and comes with a 30+ year warranty.

### Replace Option 2

Expected Life: 25 Years

Cost Estimate: \$81,000.00

#### COLD APPLIED MODIFIED SYSTEM:

This is a low odor, VOC compliant SBS/SIS/SEBS modified built up roof system that will provide thirty five (35) to 40 years of trouble free waterproofing without the odor or inconvenience to the sensitive teachers inside the building that the hot applied system may cause with air intakes, smoke and other features of the hot applied system. The cold applied system inner ply waterproofing adhesive is SEBS polymer modified so it also has better low temperature flexibility and much more elasticity than conventional asphalt has.

This option includes complete removal of the existing roof system and all of its components down to the structural wood decking. Any deteriorated wood decking will be replaced with new decking, a modified base sheet will be mechanically attached to the wood decking in compliance with Factory Mutual 1-90 wind uplift requirements, a new insulation system will be fully adhered to the modified base sheet in compliance with Factory Mutual 1-90 wind uplift requirements. The new insulation system will be a HIGH R Value, energy saving insulation. Once the insulation is installed, then a new modified built up roof system would be installed. An SBS/SIS modified system and cap sheet shall be installed, the sheet has maximum tensile & tear strength, and maximum elongation. High R-value tapered insulation lowers the interior building temperature, but raises the roof top temperature, this creates tremendous thermal shock, and thermal movement, without an elastomeric and high strength roof system, the roof will split and deteriorate pre-maturely.

A difference in the polymers is important, conventional SBS cap sheets, become brittle with exposure to UV rays and standing water, an SBS/SIS modified cap sheet will hold up to the elements much better, because the cross linking of Styrene Isoprene Styrene polymer will insure that the sheet will remain flexible and will not dry out and split during freeze thaw cycles, also a high performance SBS/SIS modified cap sheet will handle the foot traffic on these roofs better and last up to 30 to 40 years (depending on the amount of maintenance and the amount of abuse) Conventional SBS modified cap sheets last between 7 and 12 years depending on the amount of foot traffic, and the amount of standing water, and the quality of the sheet. The system would include two piles of SBS modified base sheets, adhered in SEBS modified adhesive, then the cap sheet would be adhered to the underlying layers with the same SEBS modified adhesive. A final top coat of Pyramic, a bright white highly reflective coating, would then be applied. This system is part of the California Cool Roofing Program, complies with the new Title 24 requirements due in October 2005 for low slope roofing and comes with a 30+ year warranty. All new modified flashings would be installed, and then a new free-floating metal edge coping system would be installed. This system is VOC compliant and will not cause any odors to interrupt the employees or visitors to the gymnasium.

NOTE: THE GARLAND COMPANY, WILL PROVIDE DAILY INSPECTIONS DURING THE ENTIRE INSTALLATION OF THE PROJECT, AND PROVIDE UCSB WITH DIGITAL PHOTOGRAPHIC REPORTS OF THE PROJECT IN PROGRESS. IN ADDITION, THE PROGRESS PHOTOS WILL BE AVAILABLE WEEKLY ELECTRONICALLY VIA THE INTERNET WITH A PASSWORD. ONCE THE ROOF INSTALLATION IS COMPLETE THEN GARLAND WILL ISSUE THE LONG TERM NO DOLLAR LIMIT (NDL) GUARANTEE, AND GARLAND WILL PROVIDE ANNUAL INSPECTIONS OF THE ROOF FOR THE LIFE OF THE WARRANTY. MAINTENANCE RECOMMENDATIONS WILL BE ISSUED ANNUALLY TO THE MAINTENANCE PERSONNEL, ALL OF THESE SERVICES WILL BE PROVIDED A NO CHARGE TO UCSB AS WE HAVE DONE WITH MANY OTHER SCHOOL DISTRICTS AND UNIVERSITIES.

There are 4 divisions of roofing projects, 1- proper design and good quality specifications, 2- good quality high performance products, 3- good quality labor and experienced installation technicians, 4- daily "work in progress" inspections. If one of these four are eliminated then there is a 25% risk of failure on the project, if 2 are eliminated then there is a 50% risk, and so on. Garland includes all 4 of these important divisions and insures 100% success!

*Expected Life is an average, assuming that a proper evaluation & maintenance program is performed on a yearly basis.*

# Construction Details

## General Information

<b>Client Name:</b>	University of California Santa Barbara	<b>Facility Name:</b>	533 Robertson Gymnasium
<b>Roof Section:</b>	South	<b>Square Feet:</b>	7,100

## Contact Information

<b>Architect:</b>	NA	<b>Architect Email:</b>	NA
<b>Roofing Contractor:</b>	NA	<b>Contractor Email:</b>	NA

## System Information

<b>Date Installed:</b>	UNKNOWN	<b>Warranty:</b>	No
<b># of Roofs:</b>	One	<b>Roof Deck:</b>	Steel/Metal Deck
<b>Slope Dimension:</b>	1/4:12	<b>Vapor Retarder:</b>	None
<b>System Type:</b>	B.U.R.		

<b>Felt:</b>	Polyester	<b>Total System Plies:</b>	Three
<b>Surfacing:</b>	Flood & Gravel	<b>Membrane Attachment:</b>	Hot Asphalt

### Insulation - Layer 1

<b>Type:</b>	Perlite	<b>R-Value:</b>	2.78
<b>Attachment:</b>	Hot Asphalt	<b>Thickness:</b>	1 1/2"

### Insulation - Layer 2

<b>Type:</b>	NA	<b>R-Value:</b>	NA
<b>Attachment:</b>	NA	<b>Thickness:</b>	NA

## Perimeter Details

<b>Perimeter Type:</b>	Parapet Wall	<b>Projection Flashing Material:</b>	Built-up Roof
<b>Parapet Wall Materials:</b>	Poured In Place Concrete	<b>Coping Cap:</b>	None
<b>Drain System:</b>	Internal Drains	<b>Roof Access:</b>	Ladder Needed

#### Construction Notes

The upper section consist of one built-up roof over a metal deck with perlite insulation. A built-up roofing system is comprised of alternating layers of asphalt and felts, followed by a flood coat of asphalt. The asphalt is the waterproofing agent, and the felts provide the strength to hold the system together.

# Inspection Report

## Inspection Details

Client Name:	University of California Santa Barbara	Facility Name:	533 Robertson Gymnasium
Roof Section:	South	Inspected By:	Patrick Murphy
Inspection Date:	02/02/2005	Square Feet:	7,100
Inspection Type:	Core Analysis	Age of Roof:	NA
Core Data Available:	Yes	Deck:	Good
Leakage:	N/A	Insulation:	Partially Wet

## Findings / Notes

**Perimeter Rating:** Poor

**Notes:** The perimeter of the roof is in poor condition and is approaching failure. There is significant differential movement occurring at the parapet wall and there are several areas where the field has pulled away from the wall. The all flashing have dried out and the seams have split. The reflective coating has deteriorated and is not offering much protective from the UV light.

## Field Ratings

**Field Rating:** Poor

**Notes:** The field of the roof is where the most severe problems lie. With too many blisters to count allowing moisture into the roof and the various failed repairs also allow water entry. The inter plies are dried out and pulling apart. There are multiple seam splits, poor gravel adhesion that have led to this roof section failing.

## Drains & Gutters Ratings

**Drains & Gutters Rating:** Poor

**Notes:** There are 3 drains on this roof section at each corner, the drains are clogging with debris and the grate is detached from one as well. There is a large amount of debris from the nearby trees that is creating a problem for the water to drain properly off of the roof.

## Overall Evaluation

**Overall Roof Evaluation:** The roof is at the end of its useful life. There are severe perimeter issues including the differential movement, split seams and failed reglet joints and counter flashings.. The field of the roof is where the most severe problems lie. With too many blisters to count allowing moisture into the roof and the various failed repairs also allow water entry. The inter plies are dried out and pulling apart. The field of the roof has failed and cannot be restored.

**Overall Roof Condition:** Poor

**Recommendation:** Replace



# Facility Photo Confirmation

Client Name: University of California Santa Barbara  
Location: South

Facility Name: 533 Robertson Gymnasium  
Photo Page #: 1

Photo Box

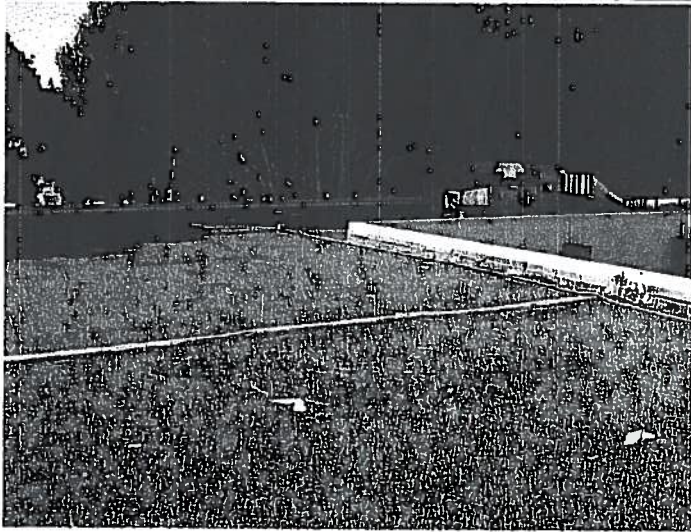


Photo Notes

View of the roof section.

Photo Box

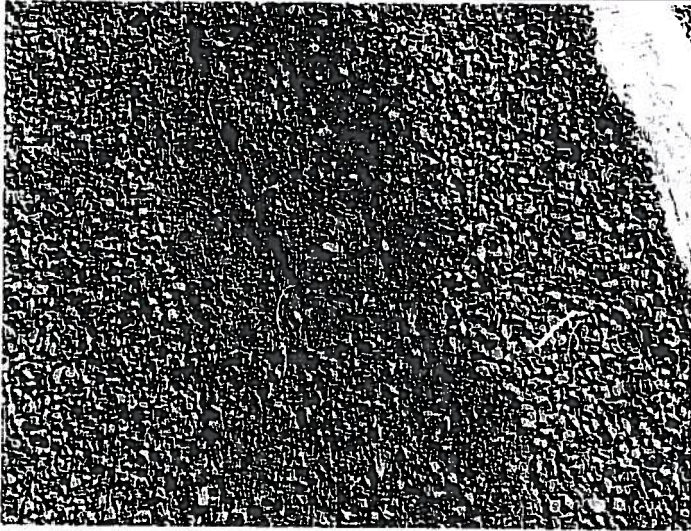


Photo Notes

Seam split in the field near the expansion joint.

## Facility Photo Confirmation

Client Name: University of California Santa Barbara

Facility Name: 533 Robertson Gymnasium

Location: South

Photo Page #: 2

Photo Box

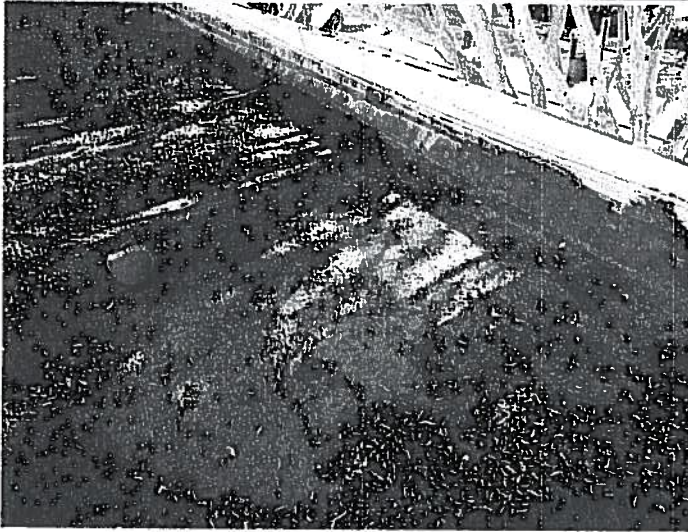


Photo Notes

In the center of the roof section on the south side there is a large area that has been patched due to previous leaks. A large amount of debris from the nearby trees is also pictured.

Photo Box

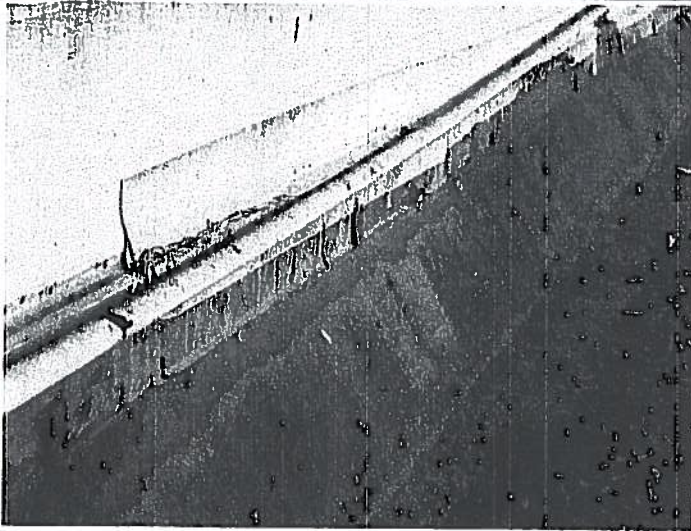


Photo Notes

The reglet joint along this section of the parapet wall had failed and has also been patched. A lot of moisture in this area is evident as it does not get much sunlight.



# Facility Photo Confirmation

Client Name: University of California Santa Barbara  
Location: South

Facility Name: 533 Robertson Gymnasium  
Photo Page #: 3

Photo Box

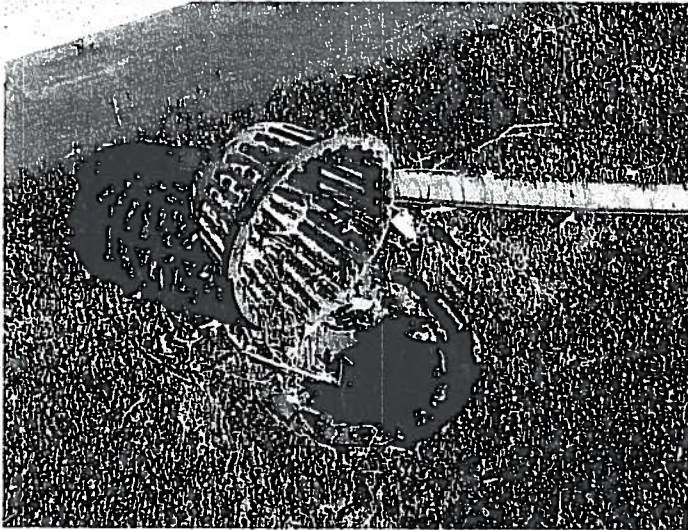


Photo Notes

The drain cage at the north end of the roof section is not secured and repairs have been made around the ring attachment.

Photo Box

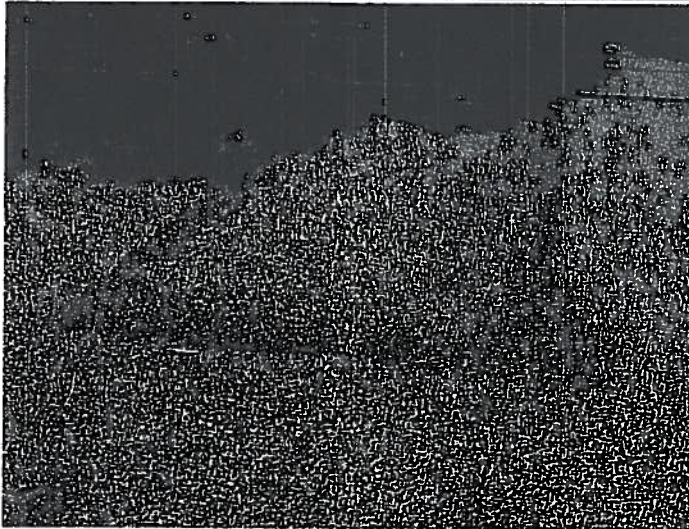


Photo Notes

This shows seams separation in the field of the roof possibly from a poor installation of the roof. The seam splits are large enough to let moisture into the system.

## Solutions Options

**Client Name:** University of California Santa Barbara  
**of Section:** South

**Facility Name:** 533 Robertson Gymnasium  
**Square Footage:** 7100

**Estimated Cost of Solution Chosen:** \$69,000.00

**Recommended Action Year:** Year 2: 2006

**Recommended Solution:** Replace

### Replace Options

**Cost Estimate** \$69,000.00

#### Replace Option 1

**Expected Life:** 30-40 Years

**Cost Estimate:** \$69,000.00

#### R-Mer Lite Flat Seam Free Floating Metal Roof

Replace the existing failed roofing system with a flat seam metal R-MER Lite free floating roofing system. This system is designed to allow the unrestricted movement of the projections, walls and penetrations throughout the entire roof area. The R-Mer Lite Insulated steel roofing system is setting the standards for low sloped metal roofing. R-Mer Lite's baked polymeric steel membrane resists corrosion and provides unequalled protection from searing sun, torrential rains, HAIL, and high winds. The System is designed to expand and contract with changes in temperature. The patterned surface gives the steel flexibility, ensuring that movement does not stress on the joints. The system is environmentally friendly and is installed without disruptions and hazards. The System is virtually maintenance free. Moreover, the tough surface resists corrosion, and will not split or crack. The Ridged Insulation designed into this system adds additional R-Value for increased energy savings. This system's 30-35 year life cycle cost provides a very cost effective system. This system has a 40 year life cycle, is 90% recyclable, is part of the California Cool Roofing Program, complies with the new Title 24 requirements due in October 2005 for low slope roofing and comes with a 30+ year warranty.

#### Replace Option 2

**Expected Life:** Years

**Cost Estimate:** \$65,000.00



#### **COLD APPLIED MODIFIED SYSTEM:**

This is a low odor, VOC compliant SBS/SIS/SEBS modified built up roof system that will provide thirty five (35) to 40 years of trouble free waterproofing without the odor or inconvenience to the sensitive teachers inside the building that the hot applied system may cause with air intakes, smoke and other features of the hot applied system. The cold applied system inner ply waterproofing adhesive is SEBS polymer modified so it also has better low temperature flexibility and much more elasticity than conventional asphalt has.

This option includes complete removal of the existing roof system and all of its components down to the structural wood decking. Any deteriorated wood decking will be replaced with new decking, a modified base sheet will be mechanically attached to the wood decking in compliance with Factory Mutual 1-90 wind uplift requirements, a new insulation system will be fully adhered to the modified base sheet in compliance with Factory Mutual 1-90 wind uplift requirements. The new insulation system will be a HIGH R Value, energy saving insulation. Once the insulation is installed, then a new modified built up roof system would be installed. An SBS/SIS modified system and cap sheet shall be installed, the sheet has maximum tensile & tear strength, and maximum elongation. High R-value tapered insulation lowers the interior building temperature, but raises the roof top temperature, this creates tremendous thermal shock, and thermal movement, without an elastomeric and high strength roof system, the roof will split and deteriorate pre-maturely.

The difference in the polymers is important, conventional SBS cap sheets, become brittle with exposure to UV rays and standing water, an SBS/SIS modified cap sheet will hold up to the elements much better, because the cross linking of Styrene Isoprene Styrene polymer will insure that the sheet will remain flexible and will not dry out and split during freeze thaw cycles, also a high performance SBS/SIS modified cap sheet will handle the foot traffic on these roofs better and last up to 30 to 40 years (depending on the amount of maintenance and the amount of abuse) Conventional SBS modified cap sheets last between 7 and 12 years depending on the amount of foot traffic, and the amount of standing water, and the quality of the sheet. The system would include two plies of SBS modified base sheets, adhered in SEBS modified adhesive, then the cap sheet would be adhered to the underlying layers with the same SEBS modified adhesive. A final top coat of Pyramic, a bright white highly reflective coating, would then be applied. This system is part of the California Cool Roofing Program, complies with the new Title 24 requirements due in October 2005 for low slope roofing and comes with a 30+ year warranty.

All new modified flashings would be installed, and then a new free-floating metal edge coping system would be installed. This system is VOC compliant and will not cause any odors to interrupt the employees or visitors to the gymnasium.

**NOTE: THE GARLAND COMPANY, WILL PROVIDE DAILY INSPECTIONS DURING THE ENTIRE INSTALLATION OF THE PROJECT, AND PROVIDE UCSB WITH DIGITAL PHOTOGRAPHIC REPORTS OF THE PROJECT IN PROGRESS. IN ADDITION, THE PROGRESS PHOTOS WILL BE AVAILABLE WEEKLY ELECTRONICALLY VIA THE INTERNET WITH A PASSWORD. ONCE THE ROOF INSTALLATION IS COMPLETE THEN GARLAND WILL ISSUE THE LONG TERM NO COLLAR LIMIT (NDL) GUARANTEE, AND GARLAND WILL PROVIDE ANNUAL INSPECTIONS OF THE ROOF FOR THE LIFE OF THE WARRANTY. MAINTENANCE RECOMMENDATIONS WILL BE ISSUED ANNUALLY TO THE MAINTENANCE PERSONNEL, ALL OF THESE SERVICES WILL BE PROVIDED A NO CHARGE TO UCSB AS WE HAVE DONE WITH MANY OTHER SCHOOL DISTRICTS AND UNIVERSITIES.**

There are 4 divisions of roofing projects, 1- proper design and good quality specifications, 2- good quality high performance products, 3- good quality labor and experienced installation technicians, 4- daily "work in progress" inspections. If one of these four are eliminated then there is a 25% risk of failure on the project, if 2 are eliminated then there is a 50% risk, and so on. Garland includes all 4 of these important divisions and insures 100% success!

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***Expected Life is an average, assuming that a proper evaluation & maintenance program is performed on a yearly basis.***

# Construction Details

## General Information

<b>Client Name:</b>	University of California Santa Barbara	<b>Facility Name:</b>	533 Robertson Gymnasium
<b>Roof Section:</b>	Upper	<b>Square Feet:</b>	39,300

## Contact Information

<b>Architect:</b>	NA	<b>Architect Email:</b>	NA
<b>Roofing Contractor:</b>	NA	<b>Contractor Email:</b>	NA

## System Information

<b>Date Installed:</b>	UNKNOWN	<b>Warranty:</b>	No
<b># of Roofs:</b>	One	<b>Roof Deck:</b>	Steel/Metal Deck
<b>Slope Dimension:</b>	1/2:12	<b>Vapor Retarder:</b>	None
<b>System Type:</b>	B.U.R.		

<b>Felt:</b>	Polyester	<b>Total System Piles:</b>	Three
<b>Surfacing:</b>	Flood & Gravel	<b>Membrane Attachment:</b>	Hot Asphalt

### Insulation - Layer 1

<b>Type:</b>	Perlite	<b>R-Value:</b>	2.78
<b>Attachment:</b>	Hot Asphalt	<b>Thickness:</b>	2"

### Insulation - Layer 2

<b>Type:</b>	NA	<b>R-Value:</b>	NA
<b>Attachment:</b>	NA	<b>Thickness:</b>	NA

## Perimeter Details

<b>Perimeter Type:</b>	Parapet Wall	<b>Projection Flashing Material:</b>	Built-up Roof
<b>Parapet Wall Materials:</b>	Poured In Place Concrete	<b>Coping Cap:</b>	Metal
<b>Drain System:</b>	Internal Drains	<b>Roof Access:</b>	Roof Hatch

#### Construction Notes

The upper section consist of one built-up roof over a metal deck with perlite insulation. A built-up roofing system is comprised of alternating layers of asphalt and felts, followed by a flood coat of asphalt. The asphalt is the waterproofing agent, and the felts provide the strength to hold the system together.

# Inspection Report

## Section Details

Name:	University of California Santa Barbara	Facility Name:	533 Robertson Gymnasium
Roof Section:	Upper	Inspected By:	Patrick Murphy
Inspection Date:	02/02/2005	Square Feet:	39,300
Inspection Type:	Core Analysis	Age of Roof:	unknown
Core Data Available:	Yes	Deck:	Good
Leakage:	Yes	Insulation:	Dry

## Perimeter / Notes

**Perimeter Rating:** Poor

**Notes:** The perimeter of the roof is in poor condition and is approaching failure. There is significant differential movement occurring at the parapet wall and there are several areas where the field has pulled away from the wall. The all flashing have dried out and the seams have split. The reflective coating has deteriorated and is not offering much protective from the UV light.

## Field Ratings

**Field Rating:** Failed

**Notes:** The field of the roof is where the most severe problems lie. With too many blisters to count allowing moisture into the roof and the various failed repairs also allow water entry. The inter plies are dried out and pulling apart. There are multiple seam splits, poor gravel adhesion that have led to this roof section failing. There have been several patches on this roof section where water is getting into the building and many of those patches have failed. Air quality of the students housed below is very important and this roof should be replaced in the near future before any water damage occurs.

## Drains & Gutters Ratings

**Drains & Gutters Rating:** Poor

**Notes:** The drainage of the roof is poor because of the failure in the roof system itself. The slope is adequate and quite good and the drains are placed properly. The main problem is the water is getting into the roof system in various areas before it has a chance to get to the drains, it's getting in through the various splits and blisters.

## Overall Evaluation

**Overall Roof Evaluation:** The roof is at the end of its useful life. There are perimeter issues including the differential movement, split seams on the base flashing and failed repairs. The field of the roof is where the most severe problems lie. With too many blisters to count allowing moisture into the roof and the various failed repairs also allow water entry. The inter plies are dried out and pulling apart. The field of the roof has failed and cannot be restored. Air quality of the students housed below is very important and this roof should be replaced in the near future.

**Overall Roof Condition:** Failed

**Recommendation:** Replace



# Facility Photo Confirmation

Client Name: University of California Santa Barbara

Facility Name: 533 Robertson Gymnasium

Location: Upper

Photo Page #: 1

Photo Box

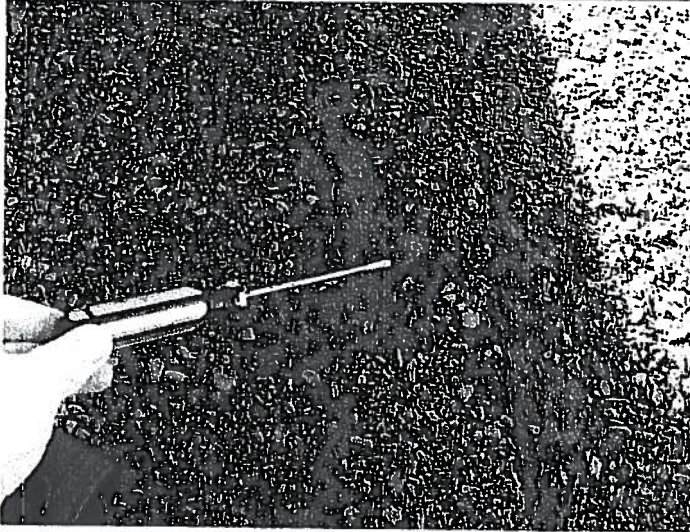


Photo Notes

Here you can see the gravel has lost adhesion and has exposed the membrane. The membrane has dried out and become brittle.

Photo Box



Photo Notes

any of the base flashings seams have split just like in the example above, this is due to differential movement that occurs in this roof system.

# Facility Photo Confirmation

Client Name: University of California Santa Barbara  
Section: Upper

Facility Name: 533 Robertson Gymnasium  
Photo Page #: 2

Photo Box

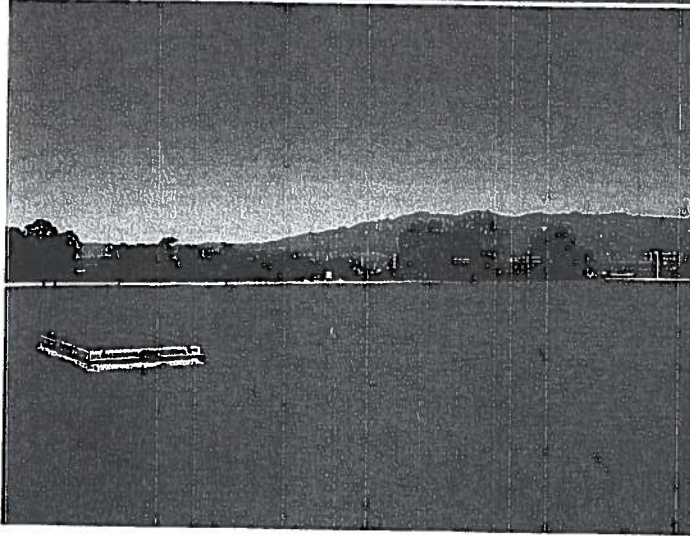


Photo Notes

Over all view of the upper section. Shows the slope and very few projections.

Photo Box



Photo Notes

This is one of many blisters on the roof. Water has seeped into the system, has become trapped and then expanded during the day creating a large blister. This blister had "burst" and you can see the severe damage created.



# Facility Photo Confirmation

Client Name: University of California Santa Barbara  
Location: Upper

Facility Name: 533 Robertson Gymnasium  
Photo Page #: 3

Photo Box

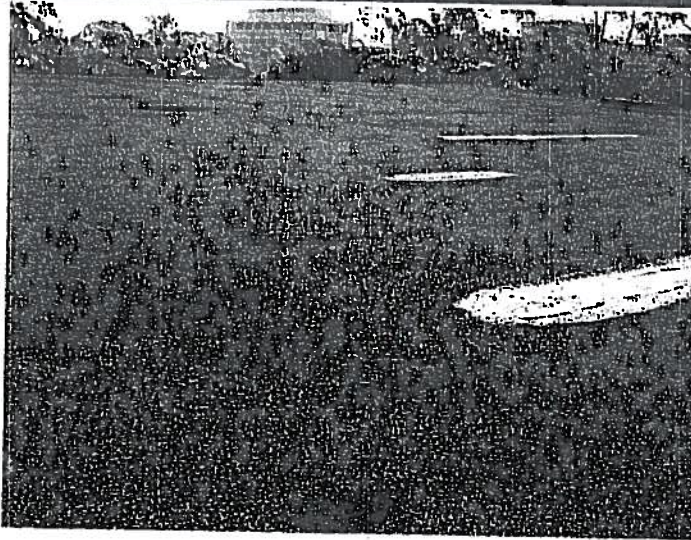


Photo Notes

This view shows many more blisters on the roof as well as the patches that have been made to try and stop the leaks. Each silver area is a patch.

Photo Box



Photo Notes

Another view of the dried roof where the inter plies are exposed showing the failure of the roof.

## Solutions Options

**Client Name:** University of California Santa Barbara  
**of Section:** Upper

**Facility Name:** 533 Robertson Gymnasium  
**Square Footage:** 39300

**Estimated Cost of Solution Chosen:** \$390,000.00

**Recommended Action Year:** Year 2: 2006

**Recommended Solution:** Replace

### Repair Options

**Cost Estimate:** \$400.00

#### Repair Option 1

**Expected Life:** 1 Years

**Cost Estimate:** \$400.00

Repair the major problems at the flashings that are the most obvious point of moisture entry, with a 3 course application of Garia-Flex, high quality flexible rubberized mastic and Garmesh, an SBS coated woven fiberglass reinforcing scrim. Apply Garia-Brite, a non-fibred aluminum reflective coating to protect the repairs for U.V. rays. 3 Course the blisters, sweep back the gravel and apply a flood of Weathersreen, a restoration treatment for gravel surface built up roofs.

### Replace Options

**Cost Estimate** \$390,000.00

#### Replace Option 1

**Expected Life:** 30-40 Years

**Cost Estimate:** \$390,000.00

**R-Mer Lite Flat Seam Free Floating Metal Roof**

Replace the existing failed roofing system with a flat seam metal R-MER Lite free floating roofing system. This system is designed to allow the unrestricted movement of the projections, walls and penetrations throughout the entire roof area. The R-Mer Lite Insulated steel roofing system is setting the standards for low sloped metal roofing. R-Mer Lite's baked polymeric steel membrane resists corrosion and provides unequalled protection from searing sun, torrential rains, HAIL, and high winds. The System is designed to expand and contract with changes in temperature. The patterned surface gives the steel flexibility, ensuring that movement does not stress on the joints. The system is environmentally friendly and is installed without disruptions and hazards. The System is virtually maintenance free. Moreover, the tough surface resists corrosion, and will not split or crack. The Ridged board insulation designed into this system adds additional R-Value for increased energy savings. This system's 30-35 year life cycle cost provides a very cost effective system. This system has a 40 year life cycle, is 90% recyclable, is part of the California Cool Roofing Program, complies with the new Title 24 requirements due in October 2005 for low slope roofing and comes with a 30+ year warranty.

#### Replace Option 2

**Expected Life:** 25 Years

**Cost Estimate:** \$375,000.00



## **COLD APPLIED MODIFIED SYSTEM:**

This is a low odor, VOC compliant SBS/SIS/SEBS modified built up roof system that will provide thirty five (35) to 40 years of trouble free waterproofing without the odor or inconvenience to the sensitive teachers inside the building that the hot applied system may cause with air intakes, smoke and other features of the hot applied system. The cold applied system inner ply waterproofing adhesive is SEBS polymer modified so it also has better low temperature flexibility and much more elasticity than conventional asphalt has.

This option includes complete removal of the existing roof system and all of its components down to the structural wood decking. Any deteriorated wood decking will be replaced with new decking, a modified base sheet will be mechanically attached to the wood decking in compliance with Factory Mutual 1-90 wind uplift requirements, a new insulation system will be fully adhered to the modified base sheet in compliance with Factory Mutual 1-90 wind uplift requirements. The new insulation system will be a HIGH R Value, energy saving insulation. Once the insulation is installed, then a new modified built up roof system would be installed. An SBS/SIS modified system and cap sheet shall be installed, the sheet has maximum tensile & tear strength, and maximum elongation. High R-value tapered insulation lowers the interior building temperature, but raises the roof top temperature, this creates tremendous thermal shock, and thermal movement, without an elastomeric and high strength roof system, the roof will split and deteriorate pre-maturely.

The difference in the polymers is important, conventional SBS cap sheets, become brittle with exposure to UV rays and standing water, an SBS/SIS modified cap sheet will hold up to the elements much better, because the cross linking of Styrene Isoprene Styrene polymer will insure that the sheet will remain flexible and will not dry out and split during freeze thaw cycles, also a high performance SBS/SIS modified cap sheet will handle the foot traffic on these roofs better and last up to 30 to 40 years (depending on the amount of maintenance and the amount of abuse) Conventional SBS modified cap sheets last between 7 and 12 years depending on the amount of foot traffic, and the amount of standing water, and the quality of the sheet. The system would include two plies of SBS modified base sheets, adhered in SEBS modified adhesive, then the cap sheet would be adhered to the underlying layers with the same SEBS modified adhesive. A final top coat of Pyramic, a bright white highly reflective coating, would then be applied. This system is part of the California Cool Roofing Program, complies with the new Title 24 requirements due in October 2005 for low slope roofing and comes with a 30+ year warranty.

All new modified flashings would be installed, and then a new free-floating metal edge coping system would be installed. This system is VOC compliant and will not cause any odors to interrupt the employees or visitors to the gymnasium.

**NOTE: THE GARLAND COMPANY, WILL PROVIDE DAILY INSPECTIONS DURING THE ENTIRE INSTALLATION OF THE PROJECT, AND PROVIDE UCSB WITH DIGITAL PHOTOGRAPHIC REPORTS OF THE PROJECT IN PROGRESS. IN ADDITION, THE PROGRESS PHOTOS WILL BE AVAILABLE WEEKLY ELECTRONICALLY VIA THE INTERNET WITH A PASSWORD. ONCE THE ROOF INSTALLATION IS COMPLETE THEN GARLAND WILL ISSUE THE LONG TERM NO COLLAR LIMIT (NDL) GUARANTEE, AND GARLAND WILL PROVIDE ANNUAL INSPECTIONS OF THE ROOF FOR THE LIFE OF THE WARRANTY. MAINTENANCE RECOMMENDATIONS WILL BE ISSUED ANNUALLY TO THE MAINTENANCE PERSONNEL, ALL OF THESE SERVICES WILL BE PROVIDED A NO CHARGE TO UCSB AS WE HAVE DONE WITH MANY OTHER SCHOOL DISTRICTS AND UNIVERSITIES.**

There are 4 divisions of roofing projects, 1- proper design and good quality specifications, 2- good quality high performance products, 3- good quality labor and experienced installation technicians, 4- daily "work in progress" inspections. If one of these four are eliminated then there is a 25% risk of failure on the project, if 2 are eliminated then there is a 50% risk, and so on. Garland includes all 4 of these important divisions and insures 100% success!

*Expected Life is an average, assuming that a proper evaluation & maintenance program is performed on a yearly basis.*

# Inspection Report

## Inspection Details

Name:	University of California Santa Barbara	Facility Name:	533 Robertson Gymnasium
Roof Section:	West	Inspected By:	Patrick Murphy
Inspection Date:	02/02/2005	Square Feet:	8,800
Inspection Type:	Core Analysis	Age of Roof:	NA
Core Data Available:	Yes	Deck:	Good
Leakage:	N/A	Insulation:	Dry

## Perimeter Ratings / Notes

Perimeter Rating: Poor

Notes: The perimeter of the roof receives a poor condition assessment. The metal coping cap is in fair condition and is holding up well. The main issues are at the base & wall flashing where there are many repairs that have been made. Areas that have yet to be repaired include the seams splits with large gaps where moisture can enter the building.

## Field Ratings

Field Rating: Fair

Notes: The section has been re-roofed once in the past with a new 2 ply built up roof attached on top of the roof. There are now 5 plies total on this roof section. The first 3 plies are dried out and have pulled away from each other. The latest plies are beginning to dry out but are holding up quite well considering there poor gravel adhesion in many areas. There are a few blisters that have formed, meaning more could follow in the future.

## Drains & Gutters Ratings

Drains & Gutters Rating: Poor

Notes: There are some issues with a lot of debris clogging the drains. Be sure to check the drains on this building after any substantial rain.

## Overall Evaluation

Overall Roof Evaluation: The section has been re-roofed once in the past with a new 2 ply built up roof attached on top of the roof. There are now 5 plies total on this roof section. The first 3 plies are dried out and have pulled away from each other. The latest plies are beginning to dry out but are holding up quite well considering there poor gravel adhesion in many areas. There are a few blisters that have formed, meaning more could follow in the future. This roof has some life left in with some preventative maintenance measures taken and annual inspections.

Overall Roof Condition: Fair

Recommendation: Repair

# Construction Details

## Project Information

<b>Client Name:</b>	University of California Santa Barbara	<b>Facility Name:</b>	533 Robertson Gymnasium
<b>Roof Section:</b>	West	<b>Square Feet:</b>	8,800

## Contact Information

<b>Architect:</b>	NA	<b>Architect Email:</b>	NA
<b>Roofing Contractor:</b>	NA	<b>Contractor Email:</b>	NA

## System Information

<b>Date Installed:</b>	02/02/2005	<b>Warranty:</b>	No
<b># of Roofs:</b>	Two	<b>Roof Deck:</b>	Steel/Metal Deck
<b>Slope Dimension:</b>	1/4:12	<b>Vapor Retarder:</b>	None
<b>System Type:</b>	B.U.R.		

<b>Felt:</b>	Polyester	<b>Total System Piles:</b>	Five
<b>Surfacing:</b>	Flood & Gravel	<b>Membrane Attachment:</b>	Hot Asphalt

### Insulation - Layer 1

<b>Type:</b>	Wood Fiber	<b>R-Value:</b>	1.25
<b>Attachment:</b>	Mechanically Fastened	<b>Thickness:</b>	2"

### Insulation - Layer 2

<b>Type:</b>	NA	<b>R-Value:</b>	NA
<b>Attachment:</b>	NA	<b>Thickness:</b>	NA

## Perimeter Details

<b>Perimeter Type:</b>	Parapet Wall	<b>Projection Flashing Material:</b>	Built-up Roof
<b>Parapet Wall Materials:</b>	Poured In Place Concrete	<b>Coping Cap:</b>	Metal
<b>Drain System:</b>	Internal Drains	<b>Roof Access:</b>	Penthouse

#### Construction Notes

upper section consist of TWO built-up roofs over a metal deck with wood fiber insulation. A built-up roofing system is comprised of alternating layers of asphalt and felts, followed by a flood coat of asphalt. The asphalt is the waterproofing agent, and the felts provide the strength to hold the system together.



# Facility Photo Confirmation

Client Name: University of California Santa Barbara

Facility Name: 533 Robertson Gymnasium

Location: West

Photo Page #: 1

Photo Box

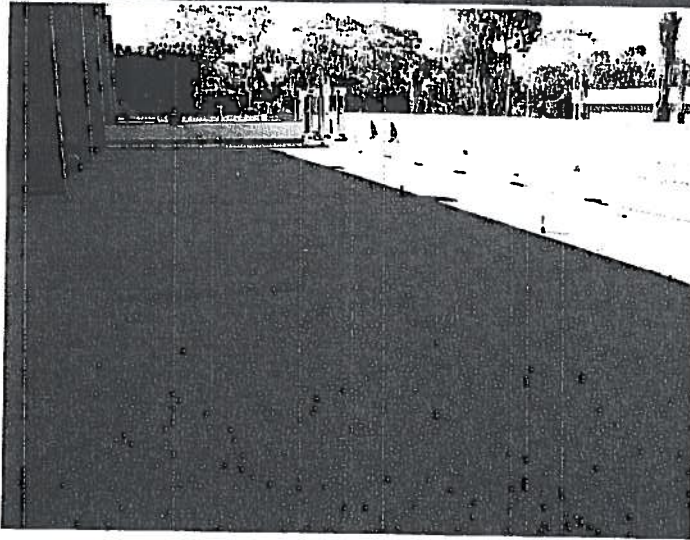


Photo Notes

View of the roof section.

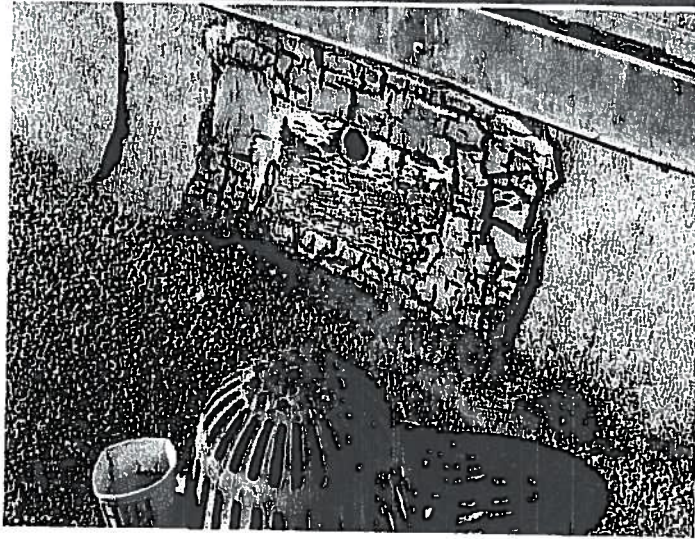


Photo Notes

Flashing repair near a drain. There are many repairs like this along the parapet wall.

# Facility Photo Confirmation

Client Name: University of California Santa Barbara

Facility Name: 633 Robertson Gymnasium

Location: West

Photo Page #: 2

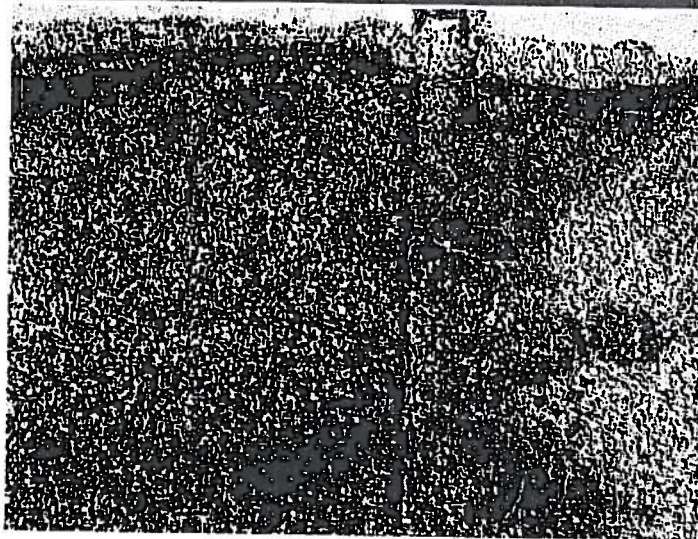


Photo Notes

The poor gravel adhesion has caused the asphalt below to become exposed and begin to alligator.

Photo Bo

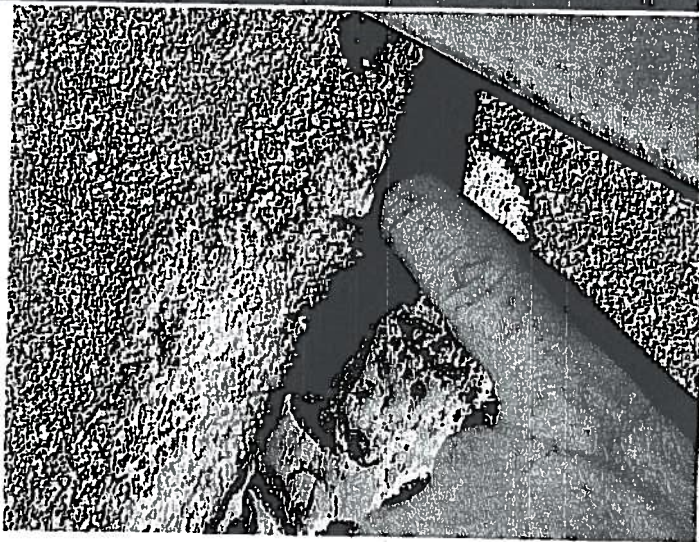


Photo Notes

Differential movement has caused the seams to split along the parapet wall.



# Facility Photo Confirmation

Client Name: University of California Santa Barbara  
Location: West

Facility Name: 533 Robertson Gymnasium  
Photo Page #: 3

Photo Box

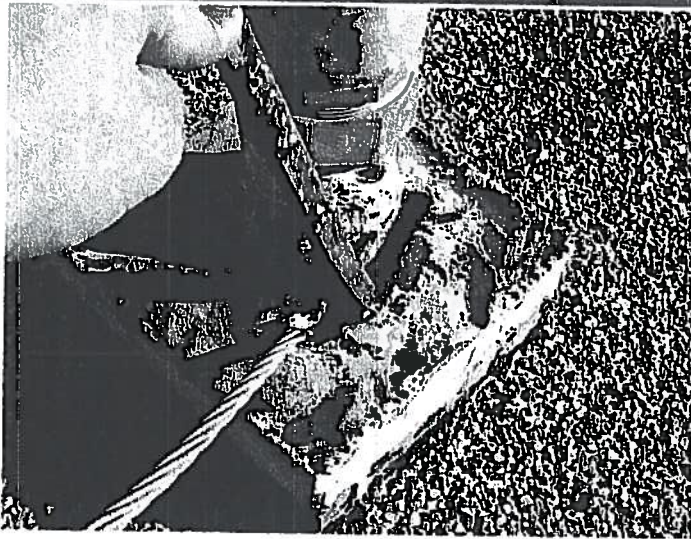


Photo Notes

The pitch pockets on this roof section have all dried out and need attention.

Photo Box



Photo Notes

Debris on this roof section is collecting at the drains. The debris needs to be removed from the roof section to avoid clogging the drain during the next rain.

## Solutions Options

Client Name: University of California Santa Barbara  
Roof Section: West

Facility Name: 533 Robertson Gymnasium  
Square Footage: 8800

**Estimated Cost of Solution Chosen: \$82,000.00**

**Recommended Action Year: Year 2: 2006**

**Recommended Solution: Replace**

### Repair Options

**Cost Estimate: \$500.00**

#### Repair Option 1

**Expected Life: 1-3 Years**

**Cost Estimate: \$500.00**

Repair the major problems at the flashings that are the most obvious point of moisture entry, with a 3 course application of Garla-Flex, high quality flexible rubberized mastic and Garmesh, an SBS coated woven fiberglass reinforcing scrim. Apply Garla-Brite, a non-fibred aluminum reflective coating to protect the repairs for U.V. rays. 3 Course the blisters, sweep back the gravel and apply a flood of Weathersreen, a restoration treatment for gravel surface built up roofs.

### Restore Options

**Cost Estimate \$35,000.00**

#### Restore Option 1

**Expected Life: 10 Years**

**Cost Estimate: \$35,000.00**

Repair the seams and the metal edge with Garla-Flex, a high quality flexible rubberized mastic. Scape off the minerals that have begun to lose adhesion. Flood the roof section with Energizer K Plus FR, a rubberized, liquid waterproofing membrane with Kevlar fibers, to bring a few more years of life to the roof. Coat the with Pyramic, a white acrylic paint used as a reflective coating for HPR membranes. This coating is highly reflective and is energy star rated and is part of the California Cool Roofing Program, complies with the new Title 24 requirements due in October 2005 for low slope roofing. This system has 5 + 5 warranty for a total of 10 years added life to the roof.

### Replace Options

**Cost Estimate \$82,000.00**

#### Replace Option 1

**Expected Life: 30-40 Years**

**Cost Estimate: \$82,000.00**



## R-Mer Lite Flat Seam Free Floating Metal Roof

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### **Replace Option 2**

Expected Life: 25 Years

Cost Estimate: \$87,600.00

#### **COLD APPLIED MODIFIED SYSTEM:**

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This option includes complete removal of the existing roof system and all of its components down to the structural wood decking. Any deteriorated wood decking will be replaced with new decking, a modified base sheet will be mechanically attached to the wood decking in compliance with Factory Mutual 1-90 wind uplift requirements, a new insulation system will be fully adhered to the modified base sheet in compliance with Factory Mutual 1-90 wind uplift requirements. The new insulation system will be a HIGH R Value, energy saving Insulation. Once the insulation is installed, then a new modified built up roof system would be installed. An SBS/SIS modified system and cap sheet shall be installed, the sheet has maximum tensile & tear strength, and maximum elongation. High R-value tapered insulation lowers the interior building temperature, but raises the roof top temperature, this creates tremendous thermal shock, and thermal movement, without an elastomeric and high strength roof system, the roof will split and deteriorate prematurely.

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*Expected Life is an average, assuming that a proper evaluation & maintenance program is performed on a yearly basis.*

#### Construction Notes

The upper section consist of one built-up roof over a metal deck with perlite insulation. A built-up roofing system is comprised of alternating layers of asphalt and felts, followed by a flood coat of asphalt. The asphalt is the waterproofing agent, and the felts provide the strength to hold the system together.