CRDM Committee Meeting

Thursday, September 9, 2010 / 1:00 pm – 2:00 pm / GSB 203A

Meeting Notes

Attended:		**Not in attendance:**
Melissa Rockwell	Sameer Kapileshwari	Spencer Moore
Dr. Liz Fletcher	Craig Ness	Laura Dhirani
Sue Yerby	Malcolm Davis	
Diane Murphy	Dr. Randall T. Lee	
Nicole Broyles	Lillian Wanjagi	
Mike Yancey	Craig Ness	

Guests: Kelly Buehler, PM – provided update for Central Plant Expansion
Dean Ruck, PM – funding request for Valenti Project (replace existing air handlers)
Ken Oliver, Mike Perry w/ARMKO (contractor) – Cullen Engineering Roof Replacement Presentation & funding request

Project Updates

Central Plant Expansion – Kelly Buehler provided brief update of this project which started on 09/07/10. Perimeter fencing set up on 09/09/10. Estimated completion date for expansion is 2014. Project is on target and under budget. Initial budgeted amount for this project was $45M, but the current budget is $38.5M. The construction contract came in far less than original estimate and additional cost savings is due to internal purchase of materials. Melissa asked Kelly whether the issues with parking for MD Anderson Library have been resolved. Kelly stated that she had a meeting scheduled with Zagui Paredes to address and hopefully resolve the parking issues.

Funding Review and Discussion

Valenti School of Communication – Replacement of Air Handlers

Dean Ruck, Sr. Project Manager, presented request to committee for $305K funding for replacement of air handlers. He stated that these are the original handlers installed back in the 1970s of which currently have ongoing problems with keeping the classrooms, offices and other areas cool. Funding request is to replace Air Handling Units 9, 10 & 11. Both Dean Ruck, and Sameer Kapileshwari recommended at least replacement of 10 & 11 since these serve majority of the building. Air Handling Unit 9 services administration offices near the current renovations underway. Funds in the amount of $262K had been previously committed, additional funds of $33K was approved by committee to complete anticipated funding for this project.

Cullen Engineering – Roof Replacement

*This request was presented to CRDM Committee, but Melissa mentioned that that CRDM funds will only be used if IKE funds are not available.

Ken Oliver and Mike Perry w/ARMKO provided brief presentation of issues to the roof. Thermal scanned photographs were submitted showing the growth of leaks to roof (see attached presentation). Roof is known to be 12-15 years old. Moisture content is significant to roof and poses a life safety issue. A hold of funds in the amount of $684K was approved by the committee until approval of IKE funds is received. Please not that this work will be bid out and that the design standards need to be clarified and the university standards utilized and not the post storm standards as presented.

Cullen Engineering – Waterproofing

This CRDM request was deferred to a future meeting.

Monthly Budget Reports

Melissa provided a brief summary of CRDM budget reports. Over $12.2M in CRDM funds have been assigned YTD. There is approximately $3.8M in funds available for CRDM requests for remaining fiscal year. Approximately $10M in CRDM funds was received for 2011 fiscal year, but $4.9M has been encumbered for to Central Plant Expansion project.

Critical Issues List

Critical issues list (spreadsheet) was reviewed and discussed. Before distributed to group, the following updates/changes were recommended and/or requested:
Delete – General/BCPs from E&G needs
Delete - Hilton Structural Garage
MP2 report has been distributed to the committee member and feedback requested. This report will be finalized during the next meeting as submittal is due to THECB in October 2010.

NEXT MEETING:

Thursday, September 23rd at 2:00 PM

Current Action Items: Preliminary Agenda for Next Monthly Meeting

1. Finalization of MP2 & MP4 reports – Melissa/Lillian
2. Update Monthly Reports - Sue Yerby
3. New Needs/Requests – Ken Oliver
    a. Engineering Waterproofing
4. Other items open to the group

UNIVERSITY OF HOUSTON
PLANT OPERATIONS
Pride in Service.

Capital Renewal & Deferred Maintenance *(CRDM)*
PROJECT REQUEST FORM

Business Services Only Request#

Project Title	ENGINEERING D2 ROOF REPLACEMENT
Building # 581	Building Name ENGINEERING D2
Emergency or Immediate Funding* ☐ Yes ☑ No	Managing Shop/Area MINOR & PLANNED PROJECTS
New Funding Request* ☑ Yes ☐ No	Add Funding to Project #

Project Description/Scope (*attach any estimate prior to request*):

Project scope: Complete removal of existing Cold Tar Pitch roof and replace with new asphalt ventilation base. Provide new Insulation as per the Current IBC and SECO building code guidelines. New installation of Thermoplastic Fleece Membrane New installation shall provide for a 20 year warranty and must maintain Hail impact and a120 mph wind.

Plant Ops Use Only

Desired Construction Start Date	Desired Completion Date	Contract Date
10/25/10	02/15/2011	9/25/10

*If Emergency Provide Justification and impact on business continuity:	Shop Request: TBD		
		Purchased Material & Services	$629,000.00
		In-House Labor	$4,000.00
		Contingency	$31,650.00
		3% Admin Fee (as applicable)	$19,939.50
		Total Estimate	$684,589.50

Requested By: Ken Oliver	Date 8/26/10	Director:	Date
Department Contact:	Date	Division Administrator:	Date
Project Manager Assigned: Ken Oliver		Executive Director, Facilities Management:	
Project Number Assigned:			
Funding Source:			

Submit completed Project Request Form to:
Sue Yerby, CRDM Program Coordinator | E-mail: sgyerby@uh.edu

University of Houston

Building # 581 D2
Cullen College of Engineering

Existing Roof Evaluation

September 9, 2010

ARMKO INDUSTRIES INC.

Project Understanding

Cullen College of Engineering Building 2
EGR2—Building 581

Perform roof evaluation services for the Cullen Engineering (Building 581 D2) on the UH Main Campus.

Cullen Engineering D2 Facility Roof System History

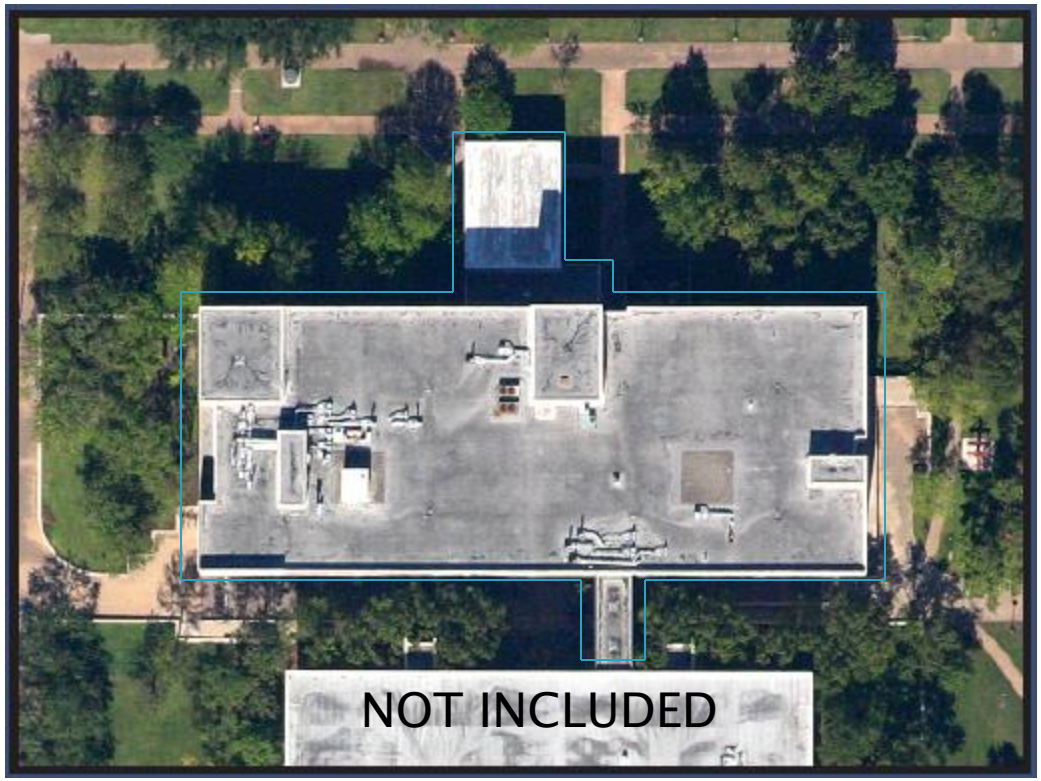
- Roof replacement was approximately 15-18 years ago. 1993-1995
- Designer for the roof system is unknown. No records held by U of H for the designer.
- Roof Nomenclature:

1. Structural concrete deck.
2. Lightweight insulating fill.
3. Four ply coal tar pitch multi ply roof systems.
4. Aggregate used as the surfacing material

Project Background

- Interior and exterior moisture infiltration evaluation of the Cullen Engineering D2 Facility
- Core samples of the existing roof
- Previous roof repairs documented by photograph
- Visual interior roof leaks in the facility (third floor)
- Review 2008 Infrared scan and compare to the 2010 infrared scan to verify additional water trapped under the roof system

CULLEN ENGINEERING



LEGEND:
REVIEW AREA

ARMKO INDUSTRIES INC.

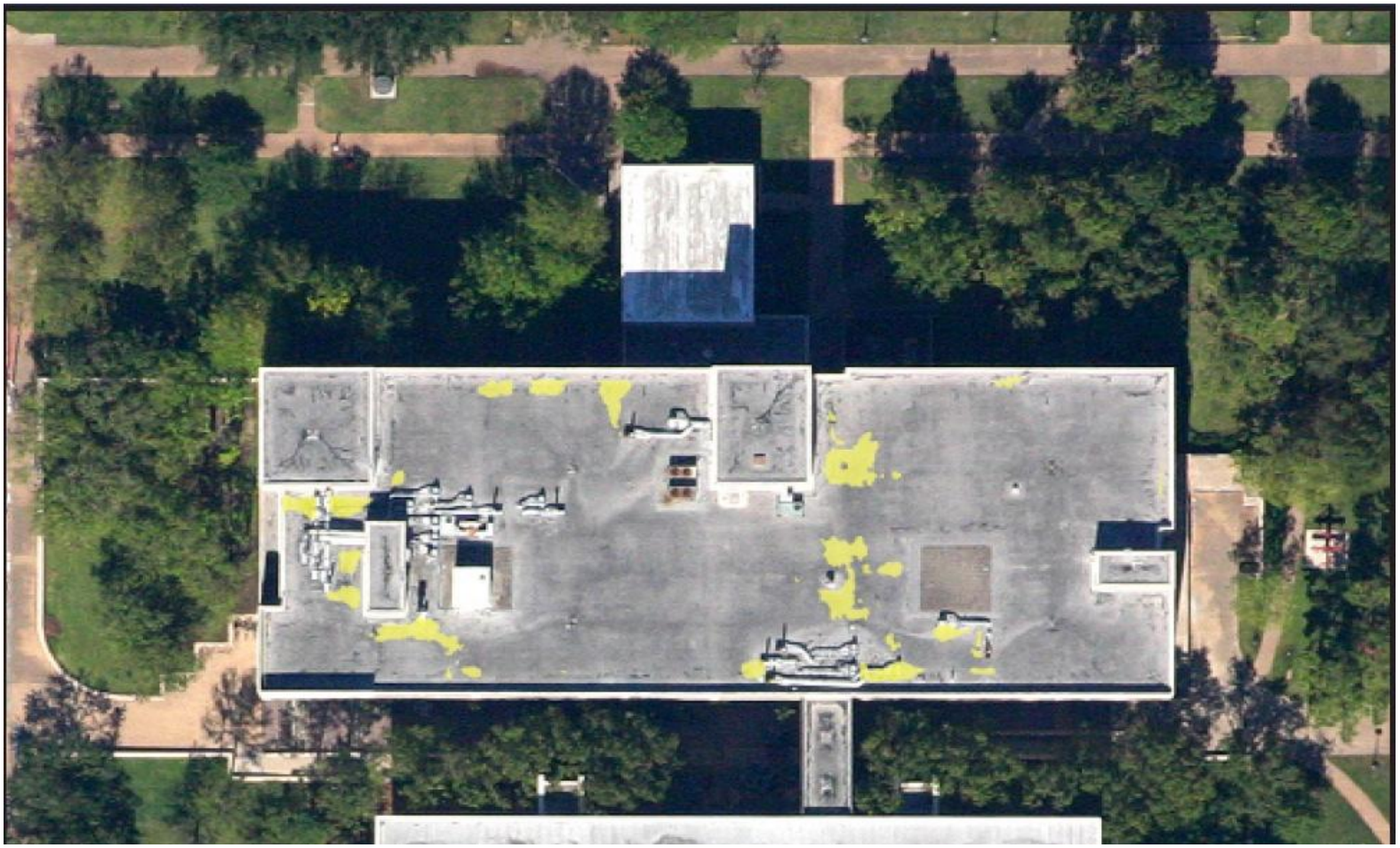
General Scope of Project

- ✓ Visual assessment of the existing roof system
- ✓ Bitumen sample and system verification
- ✓ Prepare summary of findings
- ✓ Develop replacement documents
- Assist UH during bidding process
- Provide quality control/quality assurance during the construction
- Review pay application
- Provide close out documentation for the Universities records.

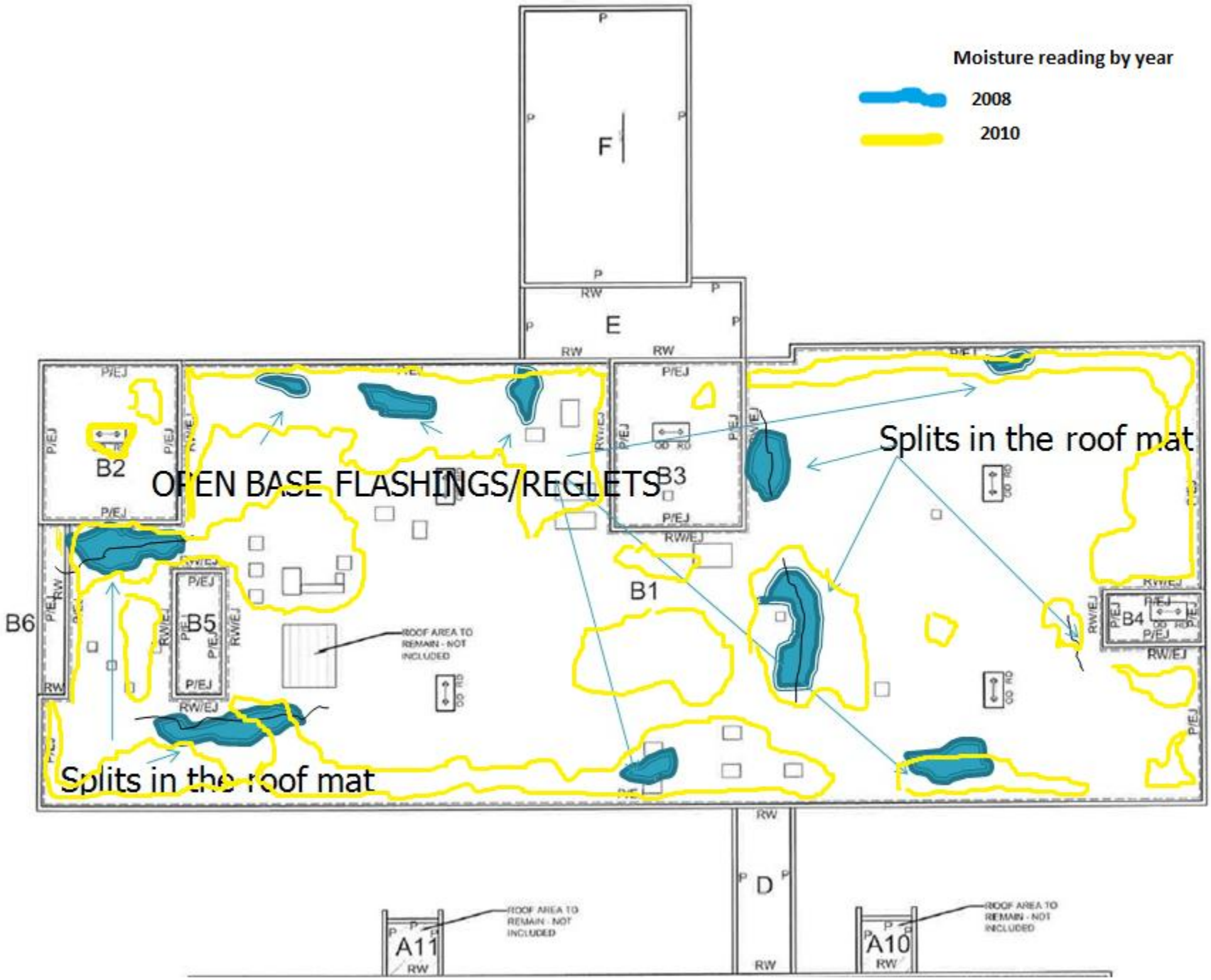
General Project Approach

- Evaluation of the roof system and possible leak areas
- Review of any previous reroofing documents
- Up-close exterior and interior visual observations
  - Removal of ceiling tiles
  - Core samples of existing roof system
  - Visual examination of existing flashings, roof penetrations, and parapet wall system
  - Two destructive sample openings were made and repaired per NRCA standards
  - Photograph findings

2008 Infrared Thermography Photo of Wet Areas



2010 Infrared Thermography Photo of Wet Areas


Moisture reading by year
2008
2010
F
E
D
B1
B2
B3
B4
B5
B6
A10
A11
OPEN BASE FLASHINGS/REGLETS
Splits in the roof mat
Splits in the roof mat
ROOF AREA TO REMAIN - NOT INCLUDED
ROOF AREA TO REMAIN - NOT INCLUDED
ROOF AREA TO REMAIN - NOT INCLUDED
P/EJ
RW/EJ
RW

Overview of the roof area

Foam application of previous roof system rise wall counter flashings

Split in the roof and flashing junctures

Sealant is deteriorated allowing moisture entry


Opening along the metal flashings


Abandoned curb sitting on top of the deck no tie in.
Possible moisture entry point

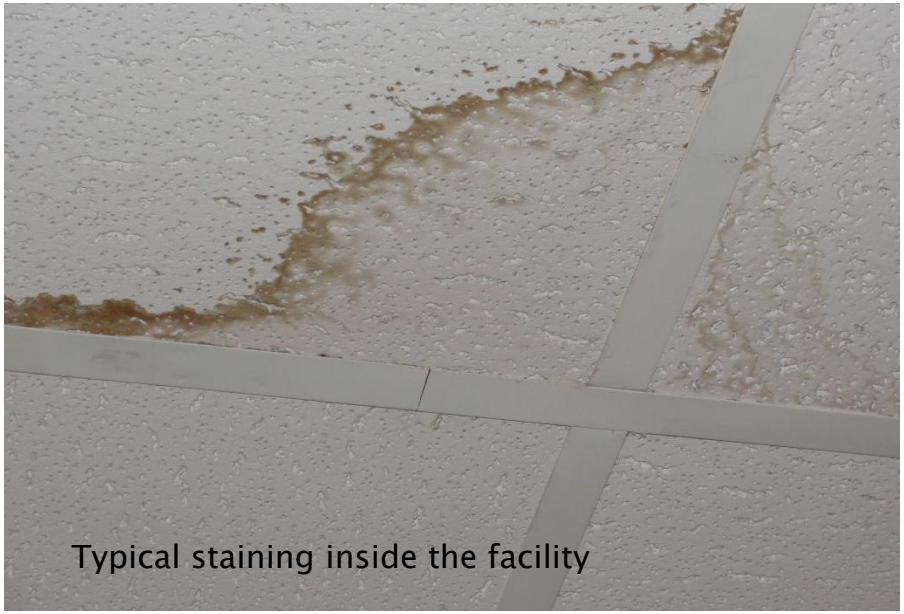

Repaired area by Maintenance


Drain flashing is open at seams

Drain flashing cracked allowing moisture entry

Sealants on all rise walls is deteriorated

Split in the field of the roof



Typical staining inside the facility

Recommended Replacement Procedures:

- Removal the entire roof system to the existing light weight fill substrate. Ensure the existing light weight fill is acceptable for the new roof application. Onsite observation.
- Mechanically fasten one layer of asphalt venting base sheet to allow cross ventilation. Attachment is to be per the International Building Codes and ASCE 7 fastening guidelines.
- Fully adhere the required insulations to meet the Current IBC and SECO Building code guidelines.
- Fully adhere one layer of one half inch gypsum recover board to ensure impact resistance is achieved.
- Fully adhere minimum of two plies of new asphalt impregnated interply sheathing.
- Fully adhere one ply of new thermoplastic fleece back membrane minimum of 60 mills. This cap sheet will provide the reflectivity and emissivity guidelines per the SECO Energy Guidelines.
- Mechanically fasten one layer of three quarter inch plywood to all rise walls.
- Fully adhere new 60 mil re-enforced flashing membrane to the plywood. Membrane should be wrapped up and over the top of the wall system to ensure no moisture entry is allowed into the wall system.
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- Remove and replace all counter-flashings, install new coping caps, drain flashings and roof penetration flashings .
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- Remove and replace all elastomeric sealants and backer rod at all control joints above the roof line.
-
- Remove all construction debris and fencing.
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- Access to the facility utilizing scaffolding stairway and cranes. Scaffolding shall be erected and secured to meet a category 2 Hurricane.
- Provide the University with a full system warranty for 20 years. Warranty is to include winds up to 120 MPH and hail impact up to and including two inch in diameter.

Project Budget Estimates

- Removal and replacement of the roof system as outlined in the above procedures.

- Materials and labor for the replacement …….$ 600,000.00
- Lightning Certification $ 20,000.00
- Bonds $ 9,000.00

- **TOTAL ESTIMATED BUDGET FOR PROJECT $629,000.00**

The cost data provided above is based upon current dollars, and should be an accurate system comparison for budgeting the actual project cost. No allowance has been made for possible inflation, deck replacement, or other contingencies.

The cost data provided above is in no way to be construed as a quotation by Armko Industries, Inc. nor by any contractor. While we make every attempt to present accurate project cost estimates, Armko Industries, Inc. must first, on your behalf, prepare a complete set of specifications for the work. Then, working closely with you, we request quotations from competent contractors.

QUESTIONS?

COMMENTS.