

## CRDM Committee Meeting

Thursday, July 22, 2010 / 2:00 pm – 3:00 pm / GSB 223A

### Meeting Notes

#### Attended:

Melissa Rockwell	Sameer Kapileshwari
Spencer Moore	Rosemary Grimmet (on behalf of Liz Fletcher)
Sue Yerby	Bob Schneller (on behalf of Malcolm Davis)
Brian Lawrence	Laura Dhirani
Nicole Broyles	Lillian Wanjagi
Mike Yancey	

#### Not in attendance:

Diane Murphy  
Dr. Randall T. Lee  
Craig Ness

**Guests:** Ken Oliver, Zagui Parades, Walter P. Moore (contractor) – M.D. Anderson Library Exterior Façade Repairs

Nicole Broyles introduced as new representative for Central IT (replacement for Jim Bradley).

### Funding Review and Discussion

#### ***M.D. Anderson Library – Exterior Façade Repair – Phase 1***

There are filtration issues causing damage to the exterior façade. Currently 31 study carrels are off-line and unavailable for student use. Ken Oliver, PM assigned to this project and Walter P. Moore (contractor) provided update and assessment of the damage to Phase 1 (North Elevation) of this project. A presentation was given by contractor detailing damaged areas; assessment and recommendation of repairs needed to exterior façade. It was determined that extensive repairs are needed including; removal of limestone panels, replacement of clips, repair to wall cavity, sealing of panes, re-glazing the windows, replacing coping panels along parapin wall and waterproofing exterior with sealant. Cost estimate for repairs to exterior facade under Phase 1 is \$1.25M. A request of 2010 CRDM funds was submitted to committee. The committee voted and all were in favor of proceeding with these repairs.

### Monthly Budget Reports

Melissa provided a brief summary of CRDM budget reports. Over \$5M in CRDM funds have been assigned YTD. There is approximately less than \$2M in funds available for CRDM requests for remaining fiscal year. Approximately \$10M in CRDM funds is expected for 2011 fiscal year, the more than 50% will be dedicated to the Central Utilities Plant (\$2M to be reserved for emergency funding). Kelly Buehler will be asked to provide a Central Plant update, including budget, current expenditures and future commitment needs. Sue Yerby will, based on this need and current commitments seek written authorization from the executive team (via Melissa/Spencer) to encumber funds for future years. In addition Sue Yerby will align the Central Plant Funding needs with available funding so that the committee can prioritize their critical needs list in development of their 5 year plan for the MP2 & 4 reports which need to be drafted at our August/September meetings.

### Critical Issues List

Critical issues list (handout) was reviewed and discussed. Only recommendation given was to add generator projects (levels 1 & 2) to this list. Several other modifications occurred post meeting and are included as an attachment to these minutes.

**NEXT MEETING:**

Thursday, August 26<sup>th</sup> 2:00 PM

**Current Action Items: Preliminary Agenda for Next Monthly Meeting**

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1. Projects for Review
  - a. Central Plant Budget
2. Critical Needs Review
3. New Needs/Requests
  - a. Engineering Roof Replacement
  - b. Valenti Project Updates and needs
4. MP2 & MP4 Discussion
5. Other items open to the group

**Estimated Critical Needs (known pre-FCI audit)**

	Low	High	Notes
<b>IMMEDIATE UNFUNDED NEEDS</b>			
CEMO Water Infiltration	\$ 250,000.00	\$ 500,000.00	Estimated
Valenti AHU replacement, zoning improvements, etc.	\$ 250,000.00	\$ 500,000.00	Estimated
Engineering Roof Replacement	\$ 700,000.00	\$ 800,000.00	Need is immediate
School of Music Structural Issues	\$ 1,000,000.00	\$ 3,000,000.00	Under study now - number is estimate
<b>Subtotal of Immediate needs</b>	<b>\$ 2,200,000.00</b>	<b>\$ 4,800,000.00</b>	

**Ongoing CRDM and Other Known Needs**

Annual Classroom Renovations (Minimum)	\$ 500,000.00	\$ 500,000.00	
Fire/Life Safety Projects	\$ 250,000.00	\$ 250,000.00	
SR1 Façade Safety issues	\$ 3,800,000.00	\$ 5,400,000.00	
Annual Estimated Emergency/Unplanned Needs	\$ 2,500,000.00	\$ 3,000,000.00	
Law Center Water and Erosion issues	\$ 1,500,000.00	\$ 4,000,000.00	
Sidewalk and Irrigation Repairs - Campus wide - assume \$10M with \$1M in annual expenditures until plan is complete	\$ 1,000,000.00	\$ 1,000,000.00	Study will be completed to shore up this number, but assume minimum of \$1M per year for 10 years
Road Improvements/replacement	\$ 1,000,000.00	\$ 3,000,000.00	Needs further study
General Facility Repairs and Renewal	\$ 1,000,000.00	\$ 1,000,000.00	
Rezoning of E. Cullen HVAC	\$ 1,000,000.00	\$ 1,000,000.00	
SERC HVAC and Controls Issues	TBD	TBD	
MD Anderson Façade issues Phase B	TBD	TBD	Under study now
Generator/Business Continuity Projects	TBD	TBD	
<b>Subtotal Secondary Critical Needs</b>	<b>\$ 12,550,000.00</b>	<b>\$ 19,150,000.00</b>	
<b>Total Known Current Need</b>	<b>\$ 14,750,000.00</b>	<b>\$ 23,950,000.00</b>	

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CRDM Meeting  
 Thursday, July 22, 2010  
 2-3pm; GSB 223A

<i>Meeting Topics</i>	<i>Presenter</i>
Changes in Membership and Introductions	IT Representation Public Safety/EHRM Integration
MD Anderson Phase 1 Exterior Façade Issues – Preliminary Approval/Secondary approval requested  Phase II discussion and short study update	Melissa Rockwell/Ken Oliver
Other Funding requests	Open to Committee
Monthly Budget Reports	Sue/Melissa
Review of known Critical Issues and Potential Costs (Pre-Planning for 2011)	For Discussion
MP2 & MP4 Report Deadlines/Process Discussion	Lillian
Open Items – Other	Committee

Next Meeting:  
 Thursday, August 26  
 2:00 PM  
 GSB

University of Houston M. D. Anderson  
Library Water Infiltration Issues

*July 22, 2010*

WALTER P MOORE

# Project Understanding

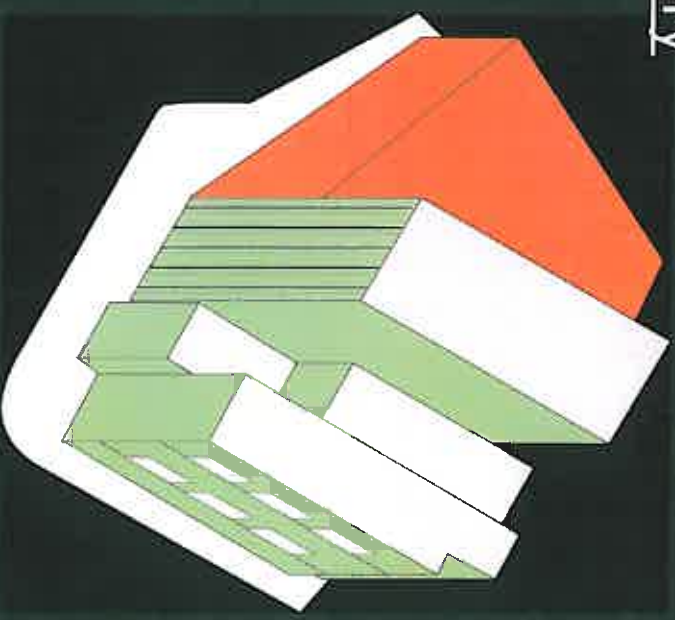


Perform building envelope waterproofing evaluation services for the M. D. Anderson Library (Building 509) on the UH Main Campus.

# Program Understanding

## M. D. Anderson Library

- Original Construction in 1950
- Designed by Staub, Rather, Howze, and Kenneth Bentsen Associates
- Renovated in 1964 (eight story addition), 1975 (five story addition), and 2004
- Façade consists of stone panels and glass
- Varying roof heights and setbacks



## Project Background

- Interior moisture infiltration observed at multiple locations at the M. D. Anderson library
- Limited previous maintenance of building envelope
- Previous façade repair documentation not available for Engineer review
- Most significant signs of moisture infiltration at the north elevation



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# PHASE I & II - NORTH ELEVATION



## LEGEND:

 - PHASE I  
REVIEW AREA

 - PHASE II  
REVIEW AREA

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# PHASE II



EAST ELEVATION



WEST ELEVATION



SOUTH ELEVATION

**LEGEND:**

-  - PHASE II REVIEW AREA

## General Scope of Project

- ✓ Visual assessment (north elevation)
- ✓ Rilem tube field testing
- ✓ Prepare summary of findings
- Develop repair documents
- Assist UH during bidding process
- Perform construction administration services

## General Project Approach

- Review of available record drawings and specifications
- Review of previous reroofing documents
- Up-close interior visual observations
  - Removal of ceiling tiles
  - Removal of selected interior finishes (pending)
- Exterior visual observations from ground and using binoculars and digital camera
  - No access by means of lift or scaffold
  - No destructive openings were made

# Phase I Visual Observations



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# Phase I Review – Typical Roof Observations



Photo 1: Overall view of Roof Level



Photo 2: Failed sealant above metal flashing



Photo 3: Distressed parapet wall coping



Photo 4: Failed joint sealant below parapet framing

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# Phase I Review – Typical Exterior Observations



Photo 1: Typical spall in stone veneer



Photo 2: Spall in stone veneer at parapet coping



Photo 3: Deteriorated stone-to-stone joint sealant

# Phase I Review – Typical Interior Observations



Photo 1: Water-stained ceiling tiles



Photo 2: Deteriorated Sheathing (above windows)



Photo 3: Corroded steel angles (above windows)



Photo 4: Damp-proofing not properly lapped

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# Phase I Review – Typical Interior Observations



Photo 1: Moisture between window panes



Photo 2: Moisture staining on window framing



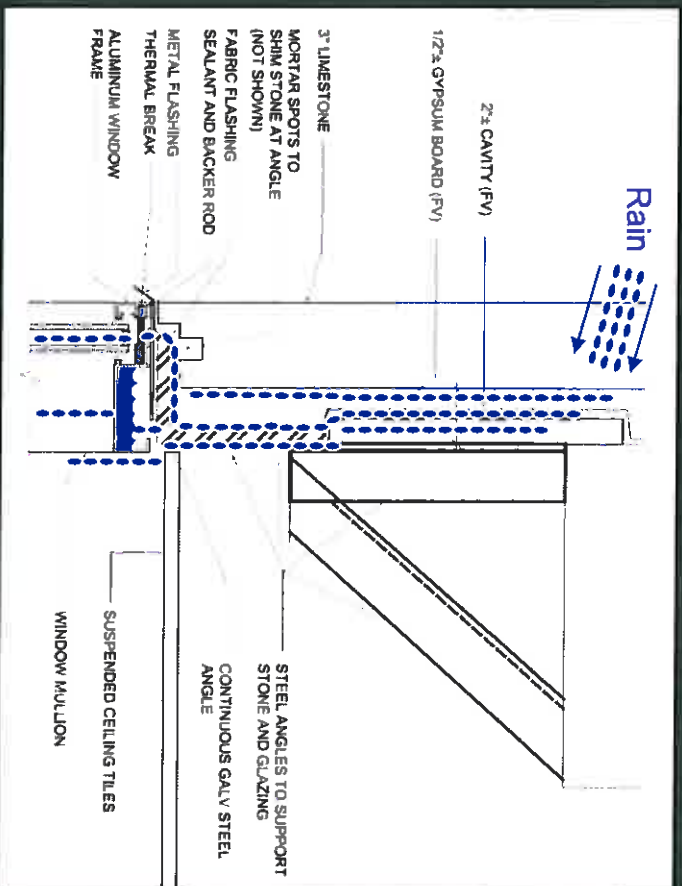
Photo 3: Moisture staining on window framing



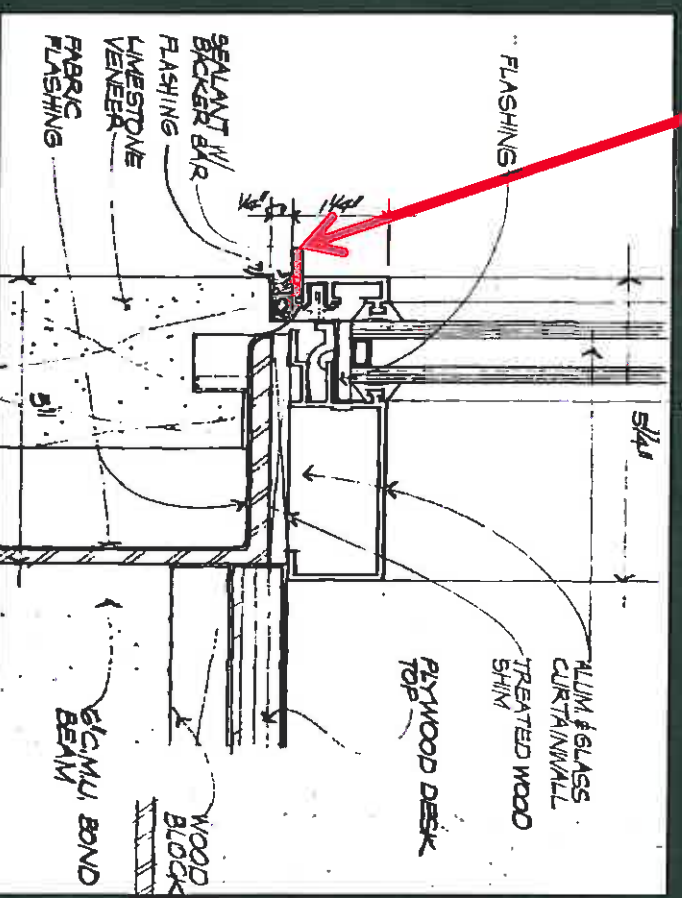
Photo 4: Delaminated vinyl below window sill

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# Phase I Review – Façade Construction



Approximate As-Built 'Top of Window' Detail  
(as observed in the field)



Post-installed  
tube weeps

'Bottom of Window' Detail  
(taken from record drawings)

- Façade is designed as a cavity wall system.
- The absence of weep holes does not allow moisture that penetrates the exterior wall surface to exit the wall cavity.

# Phase I Findings

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## Phase I Findings

### Causes of Water Infiltration

- Damaged parapet coping
- Damaged roof flashing
- Parapet CMU-to-concrete transition
- Porous stone / CMU
- Through window weeps
- Deteriorated joint sealant
  - Stone-to-stone joints
  - Stone-to-window joints
- **Cavity wall is not functioning**

## Phase I Findings Contributing Factors

- Age of structure
  - 5 story section ~ 35 years (current scope)
  - 8 story section ~45 years
- Lack of preventative maintenance over the years likely exacerbated water infiltration issues into building envelope

# Repair Recommendations

Baseline Repairs

AND

Repair Cavity Wall System

# Repair Recommendations

## Baseline Repairs:

- Replace parapet coping
- Repair flashing at roof
- CMU repointing at parapet
- Repair parapet transition between CMU and concrete
- Stone repair
- Install new joint sealant at all stone-to-stone joints and stone-to-window joints
- Install new wet glazing at all windows
- Clean and coat corroded steel framing
- Remove deteriorated gypsum board
- Replace fogged glass

# Repair Recommendations

## Repair Cavity Wall System

- Remove all stone above and below windows
- Replace gypsum board
- Install waterproofing and flashing
- Reinstall the stone that was previously removed
- Lateral connections may require upgrade
- Lintel replacement may be required in some areas
- Construction: 6 months

**Note:** Exploratory openings should be performed prior to Construction Documents (CDs) being issued to minimize unknown conditions



## Phase I

# Opinions of Probable Construction Costs

- Baseline Repairs: \$100,000
- Repair Cavity Wall System: \$750,000 to \$1,250,000

### Notes:

1. Baseline repairs for the entire Phase I North Elevation
2. Cavity wall repairs above and below windows
3. Estimated six month construction period for cavity wall repairs
4. Does not include environmental testing
5. Does not include repair of interior finishes

## Recommended Path Forward ....

### Year 2010:

- Perform exploratory openings
- Develop Construction Documents for Phase I North Elevation
- Perform façade repairs at Phase I North Elevation
- Assess Phase II building envelope locations

### Year 2011:

- Develop Construction Documents for Phase II areas of review
- Perform façade repairs as needed at Phase II areas of review

# QUESTIONS?

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