DATE: September 4, 2015

TO: All Prospective Proposers

FROM: John Kenny

RE: UMBC Commons Roof Replacement – RFP # BC-20990-K
ADDENDUM # 1

The following amends the above referenced RFP documents. Receipt of this addendum must be acknowledged by completing the enclosed "Acknowledgement of Receipt of Addenda" form, and returning with your Technical Proposal.

The Technical and Price Proposal due date and time remains as FRIDAY, SEPTEMBER 18, 2015 by 2:00 p.m. Technical and Price Proposals are to be emailed to upload.Commons.docevy60fg@u.box.com with hard copies delivered to the issuing office.
Late Proposals cannot be considered.

1. CHANGES TO SPECIFICATIONS:
   A. Section 01 50 00 – Temporary Facilities and Controls
      1. REMOVE existing Site Plan. ADD revised site plan dated 2015.09.02. Revised site plan clarifies temporary access road is by Contractor.
      2. REMOVE existing Stabilized Construction Entrance detail. ADD revised Stabilized Construction Entrance detail. Revised detail clarifies construction entrance shall performed by the Contractor.

2. ADDITIONAL RFP DOCUMENT:
   ADD Gale Associates, Inc.’s Roof Evaluation/Pre-Design Report Dated June 1, 2015 to the RFP Documents.

3. ADDITIONAL SITE VISIT:
   An additional (optional) site visit will be held on Wednesday, September 9, 2015 at 10:30 a.m. in the Commons Building, outside of Room 331.
Enclosure: Acknowledgement of Receipt of Addenda Form; Revised Site Plan for Spec Book Revised Stabilized Entrance Detail Gale Associates, Inc.'s Roof Evaluation/Pre-Design Report Dated June 1, 2015

Cc: Evaluation Committee Members Procurement File

END OF ADDENDUM # 1 DATED 09/04/15

(Original with enclosures were not mailed)
ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA

The undersigned, hereby acknowledges the receipt of the following addenda:

Addendum No. 1  dated 09/04/15
Addendum No. _____  dated _____
Addendum No. _____  dated _____
Addendum No. _____  dated _____

As stated in the RFP documents, this form is to be included with your Technical Proposal.

__________________________________________
Signature

__________________________________________
Printed Name

__________________________________________
Title

__________________________________________
Date
1. Upon completion of work remove temporary access road, repair conc. walks, existing curb cut and restore grass to areas affected by new construction.
MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL MINIMIZE TRACKING OF SEDIMENT INTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE ADDING STONE OR OTHER REPAIRS AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, OR TRACKED INTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY BY VACUUM SWEEPING, SCRAPING, OR SWEETING.

WHEN NECESSARY, WHEELS SHALL BE CLEANED OR WASHED TO REMOVE SEDIMENT PRIOR TO ENTRANCE INTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. DAILY INSPECTION AND MAINTENANCE IS REQUIRED.

CONSTRUCTION ENTRANCE

1. LENGTH - MINIMUM OF 50'
2. WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE.
4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BEPIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO DRAINAGE. WHEN THE S.C.E. IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

REMOVAL

AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, THE STABILIZED CONSTRUCTION ENTRANCE WILL BE REMOVED AND THE AREA STABILIZED UNLESS IT WILL BE USED AS AN UNDERLAYMENT FOR A DRIVEWAY.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

NOTE: DETAIL ABOVE PROVIDED BY UMBC FACILITIES MANAGEMENT ON 7/14/2015.
ALL WORK SHALL BE PERFORMED BY CONTRACTOR.
# UMBC The Commons

## Roof Evaluation/Pre-Design Report

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INTRODUCTION

In accordance with our proposal dated February 2, 2015, Gale Associates, Inc. (Gale) personnel visited the Commons Building at the University of Maryland Baltimore County in Catonsville, MD on April 29, 2015 to evaluate the existing roof system and perform test cuts at six selected areas to determine the existing as-built conditions. Additionally, Gale was requested to evaluate the flashing configuration at the rising wall and the parapet coping. The purpose of the investigation was to determine field conditions and suitable replacement recommendations to be utilized by Marshall Craft Associates, Inc. (MCA) to develop roof replacement documents. Gale performed a visual inspection of both the exterior and interior of the building to locate potential sources of moisture infiltration. Destructive testing was performed on the masonry veneer to observe as-built conditions of the throughwall flashing. The following report will discuss our findings and an overall recommended scope of work for the roof replacement project.

BACKGROUND

Record drawings dated 1/28/03 indicate the building was constructed around 2001 and that the current roof systems in place are original. The building is a three story brick and block building that houses the campus food court, various recreational areas, and student services. The roof system consists three to four plies of felts with a granular surfaced cap sheet over thermal insulation and structural concrete decks. In 2010, Gale was contracted to provide a visual observation/evaluation report to outline deficiencies in the roof system and their impact on a potential solar photovoltaic (PV) system installation. At that time, significant blistering and soft areas were noted in the modified bitumen cap sheet, apparently due to wet insulation. Upon visual inspection during our most recent investigation, it was noted that these deficiencies have persisted and numerous repair efforts have been made.

OBSERVATIONS/DISCUSSIONS

Observations and overall conditions were confirmed via core cuts and test cuts performed by an independent roofing contractor (CitiRoof Corporation). Gale was accompanied by a UMBC representative who collected samples from the core and test cuts for hazardous material analysis. Destructive testing and investigation was performed at a vertical expansion joint utilizing an illuminated borescope to verify the presence and configuration of throughwall flashing at the base of the generator penthouse wall. Gale also walked the site with MCA to review overall dimensions and existing details as pertinent to the roof replacement design. In general, Gale observed the following:
ROOF AREAS

The roof system(s) on the main roof level and the generator penthouse consist of three to four plies of roof felts with a granular-surfaced cap sheet over thermal insulation and structural concrete decks. Numerous patches and repair efforts as well as large areas of blistering and soft insulation were noted. In general, the roof system appears to be in poor condition.

The following items were also noted and are provided for discussion:

- Gale performed eleven (11) test cuts at various locations to determine existing as-built conditions. The roof system configuration was found to be the same at all locations and consists of 3 – 4 plies of felt with a granular surfaced cap sheet over 3/4-inch perlite cover board and 1/4-inch per foot tapered isocyanurate insulation over structural concrete decks. Two-ply base flashings and wood fiber cants exist at all rising walls. The cant and cover board at Test Cut #2 at the base of the generator penthouse wall were saturated.

- The parapet walls, varying in height from +/-42-inches on the generator penthouse roof to +/-52-inches on the main roof level, are currently exposed CMU on the interior with a brick veneer exterior and a precast coping (Photo #2). The precast concrete coping sealant joints are spaced at approximately 3-feet-0-inches on center and are generally deteriorated. The building’s lightning protection system is fastened to the existing coping every +/-33-inches. A reglet receiver and counterflashing are installed approximately 24-inches above the concrete roof deck at all parapet walls (Reference TC #3 and SK #4).

- At the base of the generator penthouse wall, throughwall flashing is installed approximately 16-inches above the concrete roof deck (Reference TC #2). Mechanical louvers are installed directly over the throughwall flashing at three locations. The current height of the throughwall flashing and mechanical louvers may be inadequate to provide the required minimum 8-inch flashing height with a new roof system. Raising the louvers and throughwall flashing should be taken into consideration during the roof replacement design (Photo #3).

- A continuous line of displaced mortar within the brick veneer was noted approximately 2 – 3 feet below the top of the parapet on the generator penthouse (Photo #4). This is most likely caused by corrosion of a shelf angle related to poorly installed or missing flashings.

- Vertical sealant joints in the generator penthouse walls are in generally poor condition (Reference Elevations A and B) (Photos #4 and #5).

- Low base flashing heights were observed at the base of the insulated metal wall panels on the mechanical penthouse (Reference TC #5). The wall panels may need to be trimmed in order to accommodate 8-inch flashing heights (Photo #6).

- The small metal roof on the southeast end of the building slopes down toward the main roof and terminates approximately 5 inches above the finished roof level (Photo #7). The modified bitumen base flashing extends up under the metal roof panels; however, there is a concrete curb that is higher than the metal roof deck level, creating an uneven transition (Reference TC #7). This flashing transition will be problematic and replacement of the metal roofing should be considered.
The roof hatch on the generator penthouse roof is currently not fastened and is loosely sitting atop the concrete curb (SK #5.)

RECOMMENDATIONS

In order to provide a time proven roof system that meets both the code requirements and requirements set forth by UMBC, Gale recommends the following scope of work:

- Due to the amount of moisture noted at test cut locations, the existing multiple-ply built-up roof system should be removed down to the existing structural concrete roof decks.
- Based on past projects and UMBC's preference for roof systems, Gale recommends a fully adhered .080 mil PVC roof system.
- Replace the existing 1/4-inch tapered insulation with new 1/4-inch per foot tapered insulation and 1/2-inch HD gypsum cover board. Raise existing throughwall flashings and trim the insulated metal wall panels as necessary to provide the required flashing height of 8-inches. Note that if the throughwall flashing requires raising, the louvers will need to be raised as well.
- Provide plywood sheathing and membrane flashing on parapet walls. Provide standing seam sheet metal parapet caps over existing stone copings.
- Remove and reinstall the lightning protection system.
- Provide new throughwall flashing at the base of the generator penthouse wall (if required) and at the shelf angle at the upper slab level.
- Provide new backer rod and sealant at all vertical brick masonry expansion joints in rising penthouse walls.
- Replace the small metal roof to provide a proper tie-in and adequate flashing heights. Gale recommends providing the same single-ply roof system on this section as what will be installed on the main roof areas.
- Provide new or reattach existing roof hatch on the generator penthouse roof. Extend the ladder to provide 12-inch minimum distance from top rung to top of hatch.

COST ESTIMATE

GALE estimates the cost of the work as roughly outlined in this pre-design report to be $475,000 - $575,000. The actual cost will depend on final scope of work and level of effort required.
APPENDIX A – FIELD SKETCHES
**Design Notes:**

*Penthouse:*
- Remove and replace all expansion joints
- New through-wall @ upper slab level

*Other:*
- Remove and replace small metal roof.
- New 1/4" tapered iso w/ 4-way slope (typ.)

---

Note: 4-way tapered insulation @ this location.
TC #1 CORE CUT

MULTIPLY BUR W/ SBS CAP SHEET

3/4" PERLITE

1 1/2" ISO

CONCRETE DECK
TC#2 Roof to Wall

BMU

Through Wall Flashing Receiver

SM Counter Flashing

2" Wood Fiber Cant

Base Flashing

Concrete Curb

3/4" Perlite

2" ISO

2" ISO

2" ISO

Concrete Deck

Note: Perlite is deteriorated and Saturated ISO is wet.
TC#3 @ PARAPET

Air Terminal @ 19' O.C.

Continuous L.P. Line W/ Brackets @ 33' O.C.

3 Courses Exposed CMU

Receivers

Sealant Receiver

3M Counterflashing

Base Flashing

24" To Deck

Roof Membrane

3/4" Perlite

1 1/2" Iso

2" Iso

Concrete Deck
TC #4 RTU

STRUCTURAL STEEL SUPPORT CONFIGURATION UNKNOWN

SEALANT

FACE FASTENED SM COUNTERFLASHING
WOOD BLOCKING (?)
ISO INFILL
EPDM MEMBRANE

SM COUNTERFLASHING
SBS BASE FLASHING
2" WOOD FIBER CANT
MULTIPLY BUR W/ SBS CAP SHEET

3/4" PERLITE

7 1/2" ISO

CONCRETE DECK + CURB
PENTHOUSE INTERIOR

CMU

2" ISO + 2" Z-CHANNEL @ 4'-0" O.C.
CORRUGATED METAL WALL PANEL

SM FLASHING
SM COUNTERFLASHING
BASE FLASHING

MULTIPLY BUR W/ CAP SHEET

3/4" PERLITE
1 3/4" ISO
2" ISO
2" ISO

CONCRETE CURB + DECK

1/4" = 1"
PENTHOUSE INTERIOR

CMU

2" iso

2" 2-channel

ROOF

corrugated metal wall panel

4' 0" O.C.

PLAN VIEW
TC#6  CORE CUT

MULTIPLY BUR W/ CAP SHEET

3/4" Penlite

2" iso

2" iso
TC #7 @ METAL ROOF TRANSITION

Metal Roof Panel

Fasteners @ 12" O.C.

3" T-Seam @ 12" O.C.

1 1/2" Foam Insulation

Deck unknown

Mod bit base flashing distance unknown

4" Furring Strip

Concrete Curb

10 1/2" ISO

3/4" Perilta

16" Top of Curb to Deck
MULTI-Ply BUR w/ SBS CAP SHEET

3/4" PERLITE

11 1/2" ISO (SEVERAL LAYERS)

CONCRETE DECK
TC #10 CORE

MULTIPLY BUR W/ CAP SHEET

7" ISO (MULTIPLE LAYERS)

3/4" PERLITE

STEEL DECK (APPEARS TO BE TYPE B)
TC #11 CORE (HIGH ROOF, N.I.C.)

MULTI-PLY BUR W/ CAP SHEET

3/4" PERLITE

3 3/4" ISO (MULTIPLE LAYERS)
Notes:
- Do not cut
- Sketch only
- Cut T & F from adjacent core

Assumed concrete core

Concrete deck

Window & monitor
SK#3 EXPANSION JOINT

METAL WALL PANEL (SEE TL#5 FOR DETAILS)

EXPANSION JOINT COVER

±110" ±14.58" CMU

7½ TO ROOF

3/4" PERLITE

Estimated ±7" ISO

REFER TO AS-BUILT FOR EXPANSION JOINT ASSEMBLY.
NOTES:

- Hatch isn't secure
  - Replace or remove
  + Reinstall
- Roof assembly from adjacent core (see TC #9.)
APPENDIX B – PHOTOGRAPHIC DOCUMENTATION
PHOTOGRAPHIC DOCUMENTATION

Photo 1: Test cut at base of generator wall – deteriorated cover board and saturated cant was found

Photo 2: Typical parapet wall – recommend covering wall and providing new sheet metal cap

Photo 3: Throughwall flashing and mechanical louvers at generator penthouse. Low flashing heights may be an issue with a new roof system

Photo 4: Possible shelf angle flashing issue at slab level of upper roof.
PHOTOGRAPHIC DOCUMENTATION

Photo 5: Failed sealant at vertical expansion joints

Photo 6: Low flashing height at insulated metal wall panels

Photo 7: Metal roof is recommended for replacement

Photo 8: Hatch loosely sitting on concrete curb. Recommend proper reinstallation or replacement