



A/E SERVICES FOR MAIN CAPITOL ROOF REPLACEMENT

RFQ GSD136423

January 16, 2013



STATE OF WEST VIRGINIA
DEPARTMENT OF ADMINISTRATION
2019 WASHINGTON STREET EAST
CHARLESTON, WV 25305

**BUILDING TECHNOLOGY
ASSOCIATES, INC**

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01/15/2013

Krista Ferrell, Buyer Supervisor
Purchasing Department
2019 Washington Street
Charleston, WV 25305

Subject: A/E Services for Roof Replacement for Main Capitol Building

Ms. Krista Ferrell,

Building Technology Associates, Inc (BTA) is pleased to submit for your review, a submission of our qualifications to provide Services to the State of West Virginia. BTA's expertise, acquired over 50 years in the industry, focuses on extending the life of facility roof systems and providing a full scope of roof services. BTA is looking forward to providing our design and engineering services to the Roof Replacement Project.

Since 1959, BTA has been the roof consulting industry leader and provided best-in-class Total Roof Management Services for clients such as the U.S. Department of Energy, Ford Motor Company, Pinellas County, LA World Airports, The City of San Diego, The City of Sarasota, The City of Colorado Springs, Chicago Public Schools, the Hillsborough County School District and many others (large & small) in the US and around the world. Our highly experienced and professional staff has a clear focus on Total Roof Management with qualifications and experience which are extremely relevant to this project, and BTA's multiple reports, roof database system (RoofSuite) and planning/budgeting tools are second to none.

BTA is a Corporation that has extensive past performance success with projects with both the public and private sectors and BTA's team certainly has the capacity to handle several projects with the State. We manage roofs as if they are our own. We do not wait for a leak or severe weather to react to a roof's need. Our focus is to maintain the roof systems and extend the life of the roofs for cost effective solutions rather than a costly replacement. The BTA team is hoping to provide the same services and strategies to the State of West Virginia.

BTA will ensure and has proven with past experience that projects will be completed on time, within budget, ensuring the highest quality standards are executed with safety being the cornerstone to project success. In addition, BTA will ensure that open and strong communication exists between the BTA Team and Project Owners to guarantee complete project satisfaction.

We at BTA, hope to discuss with you further the capabilities and services that BTA can offer. Please do not hesitate to contact me with any questions or request for additional information.

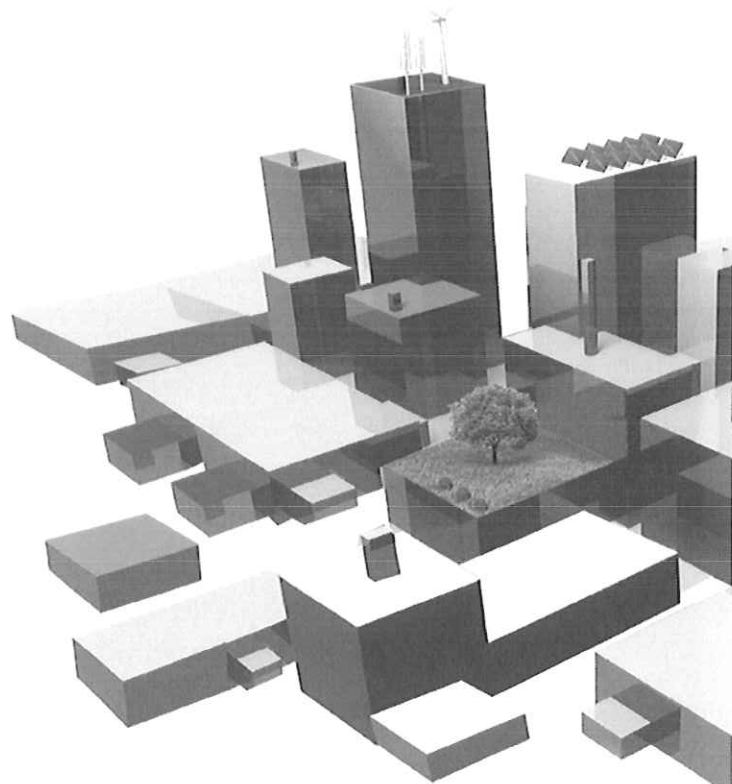
Respectfully,

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Since 1959, BTA has provided Architectural & Engineering and Design Review Services. BTA's team of Licensed Professional Engineers, Registered Roof Consultants and Registered Roof Observers specialize in the State's requested services specifically for Roof Systems. BTA understands the requirements of the Proposal and is fully prepared to provide the following services:

- Program Development to Program Validation
- Feasibility Studies/Project Definition
- Conceptual Roof Design
- Design-Build Scoping Documents
- Project Design-Construction Documents
- Specifications
- Design Reviews
- Cost Estimating
- Value Engineering
- Constructability Reviews
- Roof Evaluations
- Troubleshooting
- Construction Support Services
- BIM/CADD/Drafting Work
- General Roof Engineering Services

APPROACH:

Following a project award, the first step to the BTA approach is establishing a project schedule and plan. BTA and the State of West Virginia Project Manager will consider the following Key Project Components:

- What is the goal of the program?
- What framework is already established?
- What metrics do we want to capture?
- What obstacles (opportunities for improvement) exist?
- How do we capitalize on existing BTA processes established for other clients?
- What contractual requirements need to be met?

BTA and the State Project Manager will develop an Organization and Program Administration Plan and will approach the Roof project with the following phases:

- 1). Data Collections & Inventory Plan: BTA provides a Roof Assessment including all as-built data and current condition evaluation to determine the life expectancy and life extension opportunities. BTA provides recommendations for repair and replacement options.
- 2). Design Services: Following recommendation approval, BTA develops the design and specification documents.
- 3). Construction Management: BTA prepares all Bidding/Award Documentation, provides recommendations for award, on-site inspections, status reports/meetings, and project closeouts.



SCHEDULE & BUDGETING:

BTA uses a standardized procedure, a quality control program and pre-qualified roofing contractors to minimize and eliminate potential project problems and remain on budget and on schedule. BTA management is thoroughly involved and oversees all projects performed by the firm as well. BTA's team is made of educated and experienced professionals so that our clients are ensured a knowledgeable team is executing projects safely and efficiently. It is with BTA's patented process, organized structure, and knowledgeable management that we provide on-time and on-budget projects.

The BTA team is always investing in process improvements to ensure we are meeting the highest standards of quality, time, and cost efficiency within our projects. BTA utilizes our proprietary Roofsuite Software to determine the best course of action in roof repair and replacement. The process is based on a scientific approach and provides recommendations based on cost-efficiency and quality.

BTA's timely completion of projects remains at a high level for all projects. In any case that a delay may occur for any reason (i.e. weather), BTA will immediately inform the project owner and take all steps necessary to make up the loss time. BTA has never failed to complete a project, or defaulted on a contract. Our work record and customer support history is exemplary, and we would be pleased to provide project/contract performance records or other supporting documentation upon request.

PROGRAM ADMINISTRATION PLAN

The following is an outline of the topics associated with the Program Administration Plan:

- Overview
- Contract Deliverables and Standard Reports
- Meetings
- Performance Metrics
- Baseline and Working Schedules

Overview:

The BTA Program Management and Administration Process begin with the BTA Program Manager's interface with the identified State of West Virginia Team and the State's Project Manager. The BTA Program Manager is directly accountable for the State's satisfaction with the Program and for executing the work in accordance with the customer's expectations as it relates to safety, security, schedule, quality and cost.

Contract Deliverables and Standard Reports:

As outlined in the Request for Proposal, BTA will provide Deliverables and Standard Reports at the appropriate frequency.

Monthly Reports

BTA will provide the following documents, as described later in this document, on a monthly basis:

- Invoice and Accrual
- Month Ending Schedule Update
- Site Safety Hours

Weekly Reports

BTA will provide the following documents, as described later in this document, on a weekly basis:

- Change Order Summary
- Overall Program Schedule
- Weekly Project Status Update
- Site specific construction schedule (during construction activity)
- As-built status report (during close-out activities)



Meetings

Weekly Meetings: On a weekly basis the BTA Program Manager will conduct a telephone conference call with the State Project Manager and the applicable supporting staff in order to address the following general agenda items, on a site by site basis, and project by project basis as applicable:

- Schedule and Status of Design Activities
- Schedule and Status of Bid Meetings
- Schedule and Status of Construction Projects
- Schedule and Status of Final Inspections
- Status of Change Orders
- Status of Close-out Documents
- Status of As-Builts
- Miscellaneous Issues

BTA's Program Manager will distribute a detailed report on the above referenced agenda items.

Performance Metrics:

In order to objectively evaluate the success of the Project, BTA will work with State to develop performance metrics. Examples of typical project metrics are as follows:

- Optimum Repairs
- SE Value
- Construction Costs
- Safety Performance
- Quality of Construction
- Energy Efficiency

The following is a description and example of each performance metric:

- **Optimal Repairs**

Definition & Description:

Expressed as value added to the portfolio, the serviceability of the roof is determined by an actuarial table that considers roof type, roof age, and the number and type of defects

Optimal repairs extend the remaining service life of a roofing system in the form of an adjusted serviceability. The value of the life extension is decreased by the cost of the repair to determine the value added to the portfolio.

Example:

Replacement cost of the sample roof area is estimated at \$1M

Assuming 20 year life, the asset depreciates by \$50K per year

Optimal repair cost of the sample roof area is estimated to be \$30K

The optimal repairs will extend the life by 5 years

The value added to the portfolio is calculated as follows:

5 year life extension x \$50K = \$250K

\$250K value added to the portfolio - \$30K cost of repairs = \$220K value added to the portfolio



- **SE Value**

Definition & Description:

Identifies the remaining financial life expectancy of the client's roofing portfolio at both Year Start and Year End

Indicates if the life expectancy for the inventory is increasing or decreasing based on funding applied. Emphasizes extension of roof life through preventive maintenance, thus realizing more value from the asset

Expressed in years calculated to two decimal places

- **Construction Cost**

Definition & Description:

This metric includes all direct construction costs associated with the replacement of the roof (mobilization, hazardous material mitigation, change orders, etc.)

Prior year unit costs are adjusted for inflation based upon historical indexes

- **Safety Performance**

Definition & Description:

This metric identifies various safety related items which include:

Lost Workday Incident Rate (LWIR) - To calculate your rate, divide the number of lost workdays by the total number of hours worked by all employees for the calendar year. Multiply that number by 200,000 (the base for 100 full-time employees working 40 hours a week for 50 weeks).

Total Incident Rate (TIR) - To calculate your rate, divide the number of OSHA reportable injuries by the total number of hours worked by all employees for the calendar year. Multiply that number by 200,000 (the base for 100 full-time employees working 40 hours a week for 50 weeks).

- **Quality of Construction**

Definition & Description:

Provides an assessment of the quality of the replacements made under the Program

Identifies variances as recorded on the daily quality control records (QCR)

Expressed in the form of a P-chart that shows the percent defective relative to the number of sample points gathered.

Construction quality can be monitored as the goal of six sigma is approached.

Pareto chart shall be provided stratifying defects.

- **Energy Efficiency**

Definition & Description:

Identifies the change in R-Value associated with the existing system and the newly replaced system.

Using utility cost data provided by the sites, calculates the annual and 20-year savings realized through increases in the R-Value.

Baseline and Working Schedules:

BTA will develop, update and report on the following schedules on a weekly basis:

- Overall Project Schedule
- Design, including milestones for the following activities:
 - Site Splits
 - Site Risk Assessment
 - Scope-setting Meetings
 - Pre-Design Meeting
 - Field Investigation
 - 70% Contract Review Documents
 - 100% Contract Review Documents
 - Release of Bid Documents
 - Bid Due Dates
 - Award Dates
 - Construction
 - Close-out

Site Specific Construction Schedules, including milestones for the following activities:

Pre-construction
Completion and Approval of Safety Plans
Completion and Approval of Site Submittal Review
Completion and Approval of Technical Submittal Review
Pre-construction Meeting
Project Mobilization
Badges & Security Approval
Material Shipments
Kick-off Meeting
Construction
Re-roofing
Repairs
Punch List
Post-construction
Final Inspection
Site Acceptance
As-built Data
Close-out Documentation

BTA will obtain concurrence on the baseline schedules from the State and the applicable site prior to distribution and will use this information in order to report on the working schedule as conditions change.



PROCUREMENT AND CONTRACTOR QUALIFICATION PLAN

Overview of Procurement Process:

BTA's procurement process follows these steps:

- Pre-qualification of Roofing Contractors
- Development of the Bid List
- Issue Invitation to Bid
- Delivery of Contract Documents
- Conduct On-site Pre-bid Meeting
- Bid Process and Acceptance of Proposals
- Review and Verify the Accuracy of Bid Proposals
- De-scope and Obtain Revised Bid Proposals
- Receipt of Approved Work Order from Client
- Notice of Award, if necessary
- Prepare and Execute the Necessary Sub-contract Agreements

Pre-qualification of Roofing Contractors:

BTA performs pre-qualification of roofing contractors using the Contractor Pre-qualification Module of the RoofSuite system. The pre-qualification process is conducted and updated on an annual basis. In general, the process ensures that participating roofing contractors are:

- Safety
- Technically Competent
- Financially Solvent
- Insurable and Bondable for the size of the projects in the Program
- Consistently demonstrating a solid reputation for performance
- Competent to use computer bidding techniques

The RoofSuite Contractor Pre-qualification Module provides the following:

- Creation and presentation of an electronic questionnaire form on the BTA website for potential participants in the Program to complete.
- A menu system and tool bar for navigation between pages.
- The ability to feed existing information from BTA's data server into the forms. This allows information to be populated in the forms the contractors access over the web.
- Remote users the ability to print out questionnaires locally for their review and signature.
- The ability to run the applying firm through a series of automated checks to determine if it meets minimum pre-qualification standards for participation in the Roofing Project. Screening criteria are based on client-specific standards and requirements, and can be adjusted at will by BTA.
- A process for enabling applying firms to update their information in the BTA database whenever there is a material change in their circumstances.

Development of the Bid List:

BTA will use the following procedures to develop the bid list for the State Project:

Prepare a tabulated summary of pre-qualification results on a selected body of applicants for review. If any additional candidates are identified by the State, BTA will ensure the candidate completes the pre-qualification process.

BTA will obtain the approval from the State of West Virginia.



The final bid list must ensure that a minimum of five (5) qualified roofing contractors shall be solicited to participate in the Pre-bid Meeting and submit a valid bid proposal.

Invitation to Bid:

Once the bid list has been approved by the State, BTA will issue an Invitation to Bid to selected roofing contractors.

The Invitation to Bid will be distributed typically (4) weeks prior to the actual Pre-bid Meeting. The roofing contractor must accept or decline the invitation within two (2) business days.

If less than three (3) roofing contractors accept the invitation, BTA will return to the procedures outlined in the Development of the Bid List.

Conduct On-site Pre-bid Meeting:

BTA will conduct an On-site Pre-bid Meeting for all of Projects. The participants will typically include the following: State Project Manager, BTA Program Manager, Site Primary Program Manager, Site Safety Manager, Site Security Manager, BTA Project Manager, BTA Designer, and Roofing Contractor Project Managers.

The Pre-bid Meeting Agenda will include the following items:

- Site safety requirements, Site security requirements, Site environmental requirements
- Review of General & Site Conditions
- Review of Bid Form
- Review technical specifications.
- Review drawings and details
- Work schedule
- Key personnel and contacts
- Subcontractor requirements
- Invoicing procedures
- Bid due dates
- Tour and walk-through of all roof replacement areas

Bid Process and Acceptance of Proposals:

After the On-site Pre-bid Meeting, BTA will Prepare and distribute meeting minutes. BTA will accept questions from the bidders and provide written clarifications to all of the participants in the On-site Pre-bid Meeting and prepare and distribute the applicable addenda.

BTA will utilize the Roofing Contractor Bidding Module of the RoofSuite System to accept proposals from the Roofing Contractors. The RoofSuite System uses unique user identifications and passwords which are time sensitive. Each bidder is issued the required access information in order to prepare and submit their bid proposal. At no time during the bid process can bidders see other proposals. Only personnel with need-to-know status have access to the data in the Roofing Contractor Bidding Module of the RoofSuite System.

Upon receipt of the Bid Proposals, BTA will ensure the validity of all bid proposals. If an invalid proposal is received, BTA will obtain written documentation from the bidders who did not submit a valid bid. This documentation should include the necessary background information in order to ensure the proper documentation in case of an audit.



BTA will compare the bid proposals to the BTA estimate and verify any significant deviations (e.g., BTA estimate is \$100,000 for a roof replacement area, but one of the bidders has a price of \$500,000). BTA will then prepare a Bid Analysis Spreadsheet from the Roofing Contractor Bidding Module of the RoofSuite System.

Once the review and verification process is complete, BTA will submit a Bid Analysis, generated by the Roofing Contractor Bidding Module of the RoofSuite System for review by the State.

At no point during the review and verification process will BTA discuss the order of the proposals with any of the bidders. Once BTA has received written approval from the State of West Virginia, BTA may share the results of the bid with the submitting roofing contractors, but at no time shall BTA provide specifics on the amount of the low bid or the difference between any price proposals.

DESIGN MANAGEMENT PLAN

Overview of the Design Process:

The following is a summary of the activities associated with the Design Process:

- RoofSuite Background
- Scope-setting Meeting
- Design Field Work
- Pre-Design Meeting
- Environmental Engineering and Hazardous Materials Requirements (By site)
- Structural Engineering Requirements
- Development of Contract Documents
- Construction Project Management Services

RoofSuite Background:

BTA's design process begins with the Data Collection & Inventory process, which gathered objective data on the condition of the roofing systems, including as-built, historical and defect information. This data was evaluated by the RoofSuite™ System in order to obtain a statistically valid assessment of the remaining economic life of each roof's membrane.

The RoofSuite™ System then uses computer modeling of the impact of an unlimited set of potential repair combinations on each roof membrane in comparison to the replacement options. RoofSuite™ then determines the most cost-efficient course of action necessary to sustain the facility's roof asset. When financial constraints impact the possible courses of action; RoofSuite™ optimizes the needs of the entire portfolio and the computer modeling results in an optimized set of repair and replacement recommendations with associated budgets.

Scope-setting Meeting:

The Scope-setting Meeting is conducted at the site or by teleconference and the participants in the meeting typically will include: The Program Manager, Local Site Roofing Point of Contact and the BTA Program Manager.

The following are the general agenda items for the meeting:

- Additions and/or Deletions to the Final budget.
- Tentative Construction Schedule.
- Asbestos and/or RADCON Issues.
- Responsibility for Environmental Engineering Issues.
- Security and Access for Roofing and Staging.
- Available Working Hours (e.g., days or swing shift, built-in Owner Delays for Security, etc.).
- Current Site General Conditions for Construction Projects.



Upon completion of the Scope-setting Meeting, BTA's participant will prepare Meeting Minutes for distribution to the participants for review, completion, comment and approval.

Design Field Work:

BTA's Project Manager will coordinate and schedule execution and completion of the field work by the Field Designer. In order to complete the design field work, BTA's Designer will need to have access to all of the replacement or subjective repair areas in the Scope of Work.

In addition, in order to validate the existing membrane configuration, BTA's Project Manager will work with the local site roofing point-of-contact in order to ensure that a current roof cut can be examined during the field investigation process. This extra step reduces the possibility of encountering unforeseen conditions during the tear-off operations which could result in a change order outside of the competitive bidding arena.

The Designer assesses the work area to execute, at a minimum, the following tasks:

1. Verify dimensions of roof areas.
2. Obtain specific measurements, as necessary.
3. Identify detail configurations.
4. Verify penetration and curb information.
5. Confirm demolition requirements.
6. Discuss site-specific application issues.
7. Leak Investigation, as necessary.
8. Core roof to obtain existing roof system information.

Pre-Design Meeting:

Upon BTA's Designer preliminary selection of roof membrane and insulation systems, BTA will develop design abstracts for each roof area proposed for replacement. The abstracts will include the identification of the existing roof assembly, the proposed roof assembly and any design issues including any pre-work that the site may be responsible. Included in the abstracts will be an R-Value calculation identifying the proposed roof insulation system make-up and R-value.

Upon completion of the abstracts, BTA will conduct a pre-design meeting with the client to gain the client's input and acceptance of BTA's proposal. Once the client and BTA are in agreement of the proposed roof membrane and insulation, BTA will proceed to document development. Attendees at the pre-design meeting are as follows:

State of WV Project Manager (as necessary)
Local Site Roofing Point of Contact
BTA Program Manager, Project Manager or Designer

Environmental Engineering and Hazardous Material Requirements:

Upon completion of the Scope-setting Meeting, BTA's Project Manager coordinates with the appropriate contacts at the individual facilities in order to ensure that the applicable environmental engineering tasks are completed concurrently with the BTA design development.

Upon completion of the required environmental engineering tasks, the appropriate contacts at the individual sites provide the applicable documentation to BTA for processing and incorporation into the Contract Documents.



Structural Engineering Requirements:

Structural improvement will normally consist of only deck replacement of less than 10%, edge repair, eave repair, and roofing required fall protection anchors. Structural evaluation for roofing related dead load increase will be considered a normal part of design. Structural requirements other than those listed above will be identified and communicated to client.

Development of Contract Documents:

The Designer prepares the following documentation for incorporation into the Contract Documents:

1. Summary Scope of Work which includes the following information, at a minimum:
 - Detail description of the existing roofing system.
 - Identification of the deck material.
 - Detail description of the proposed roofing system.
 - Outline of any demolition requirements
2. Red-line mark-ups and/or hand sketches of all detail work.
3. Red-line mark-ups of roof plans showing detail cuts, demolition work, etc.

The following is an outline of the tasks that need to be completed, prior to issuing 70% Contract Review Documents to the client:

- Deliver drawings and details to the CADD Technician for processing.
- Obtain the current version of the General Conditions Update the General Conditions based on the specifics of the pending project.
- Update BTA's Special Conditions based on the specifics of the pending project.
- Update, modify, revise, and edit the applicable Master Specifications for Re-roofing and Roof Repair.
- Use the RoofSuite™ System to generate a Design Consultant Deliverable (DCD) file, which identifies the selected repair and replacement options on each roof area in the project, as finalized at the Scope Setting Meeting, and creates the template for the bidding documents.
- Use the DCD to create the applicable Defect Listings for Repair Areas.
- Create an Invitation-to-Bid.
- Use the RoofSuite™ System to generate a Bid Proposal Form.
- Create a Cover Page and Table of Contents.
- Review draft version of drawings and details and returns the red-line mark-ups to the CADD Technician for processing.
- Create the necessary .pdf files for reproduction at the local site.
- Distribute an internal review document to the Project Manager, Licensed Professional Engineer and Designer for review and approval.
- Incorporate internal review comments and prepares for distribution.

70% Contract Review Documents

BTA shall submit hard copies of the 70% Contract Review Documents to the State who typically have ten (10) working days to review the documents and develop written review comments. Upon receipt of the comments, BTA will have ten (10) working days to incorporate the comments into the 100% Contract Review Documents.

100% Contract Review Documents

Upon incorporation of the 70% Contract Review Document Comments, BTA shall submit hard copies of the 100% Contract Review Documents to the State who will typically have three (3) weeks to review the documents in order to ensure incorporation of the 70% Contract Review Document Comments, and provide final feedback. The State will submit these comments to BTA



Within one (1) week (five working days) of receipt of the comments, BTA will incorporate the information and assemble the bidding documents.

Bid Documents

BTA shall submit hard copies of the Final Specifications and Drawings Stamp with a Professional Engineering Seal to the State and all of the participating contractors at least one (1) weeks prior to the Pre-Bid Meeting. .

Addenda

As necessary, BTA will develop and transmit the necessary Addenda.

CONSTRUCTION PROJECT MANAGEMENT SERVICES

Technical Submittal Review

BTA will review, comment and approve or reject the following technical Submittals:

1. Roofing Manufacturers prequalification statement
2. Roofing Manufacturers Acknowledgement
3. Materials List and Description
4. Detail Shop Drawings
5. Roofing Manufacturers product literature

BTA's contract controls manager will report on the status of the above referenced submittals via the Deliverables Checklist in the RoofSuite System.

Safety Submittal Review

The awarded contractor's health and safety program submittals will be received and reviewed by BTA's Program Manager, who subsequently coordinates his review with the designated facility safety officer, and works with the awarded contractor's safety officer as necessary to resolve any unsatisfactory aspects of the contractor's safety program.

Technical Quality Control & Assurance

BTA's Designer performs the following tasks:

- Review Field Quality Control Reports (QCR) to identify any technical variances.
- Monitors, tracks and brings resolution to any technical variance identified on the QCR.
- Provide technical support as necessary.
- Receives, reviews, and accepts or rejects 3rd party laboratory analysis of test samples extracted from the awarded contractor's work.

- If variances are noted with the test sample, coordinates with the applicable materials manufacturer and recommends an acceptable course of action to resolve the variance to the Program Manager and Project Manager.
- Provides technical support to the Program Manager, Project Manager and the local site roofing point-of-contact as necessary



Punch List Inspection

BTA's Program Manager, Project Manager or Designer participates in the Punch List inspection of the project, evaluating and verifying the contractor's compliance with the specification. The following is a general listing, at a minimum, of the items that are reviewed during the inspection:

- Verify that the grounds have been restored to the original condition
- Verify construction details meet design requirements
- Verify sheet metal work is complete
- Verify surfacing is acceptable
- Verify penetrations have been flashed properly
- Verify rooftop is reinstalled and functional
- Verify removal of abandoned curbs and equipment
- Verify that the roof is clean and free of debris

BTA will prepare and distribute Meeting Minutes and Punch List.

Final Inspection/Lessons Learned Meeting

BTA's Program Manager participates in the final inspection/lessons learned meeting of the project. The following is a general listing, at a minimum, of the items that are reviewed during the inspection/meeting:

Verify the punch list items have been completed.

Discuss the project with the site team and establish any lessons learned for future years projects.

BTA will prepare and distribute Meeting Minutes and additional Punch List if required.

As-built Drawings

The Project Manager will coordinate the receipt of the project's as-built data, record drawings and close-out documentation for review and acceptance or rejection.

CONSTRUCTION MANAGEMENT PLAN

The following is an outline of the topics associated with the Construction Management Plan:

- Overview
- On-site Management
- Pre-Construction
- Construction Phase
- Post-construction Phase

Overview:

The BTA Construction Management Plan begins with the BTA Program Manager's interface with the local site roofing point-of-contact, as it relates to the coordination, scheduling and execution of the On-Site Management, Pre-construction, Construction and Post-construction Phase.

The BTA Programt Manager is directly accountable for the local site's satisfaction with the construction projects and for executing the work in accordance with the customer's expectations as it relates to safety, security, schedule, quality and cost.

On-Site Management

BTA will assign an On-site Manager to act as their agent during execution of the project.

The following is an executive summary of the responsibilities of the BTA On-site Manager:

- Study and maintain a thorough familiarity with contract documentation:
- Attend the Preconstruction Roofing Conference
- Obtain the necessary security/access badge
- Attend site specific training to gain access to facility
- Maintain presence at the construction site when the Roofing Sub-contractor is setting up, delivering materials, or working on-site, unless directed otherwise by the BTA Program Manager
- On a day-to-day basis, interact with the Roofing Sub-contractor's Quality Controller and the local site technical representative
- Direct any questions regarding the appropriateness of materials or installation procedures and practices to the BTA Program Manager
- Maintain daily communications with the BTA Program Manager
- Maintain communications with the site personnel during the workday in order to coordinate site requirements with the Roofing Sub-contractor
- Ensure the Roofing Sub-contractor's compliance with the Contract Documents
- Complete and submits a Quality Control Record and Defect Listing, as applicable, on a daily basis
- Ensure project materials are in compliance with the Materials List and Description and record the quantities used and application rates on a daily basis.
- Complete and submits the Daily Safety/Security Report
- Performs preliminary vehicle inspections prior to contractor's employees entering a secure work area for the first week of the project and at designated weekly times thereafter.
- Upon approval and written direction from the BTA Program Manager, ensures changes to construction specifications or drawings are documented
- Develop and maintain the Site Manager's Project Logbook on the Project
- Complete the Roofing Contractor Performance Evaluation on a weekly basis
- Perform labor standards interview to ensure contractor compliance with Davis-Bacon Act.
- Attend job meetings
- Work with the BTA Program manager in order to update contractor's schedule
- Schedule job meetings as necessary
- When Project specifications require sampling, select locations for test samples to be removed from the roof membrane by the Roofing Sub-contractor for laboratory analysis
- Ensure incomplete work is finished prior to the final inspection
- Complete the On-site Management Billable Days Report on a monthly basis.
- Manage the following activities:
 - The work at the site
 - Communicating the schedule to appropriate parties in order to ensure that all parties are aware of the work to be performed
 - Informing site personnel of safety violations by the contractor
 - In-progress meetings with the BTA Project Manager, Roofing Sub-contractor and site personnel
 - Plan-of-the-day meetings with the contractor
 - Plan-of-the-week meetings with the contractor
 - Daily updates as to work performed by the contractor



Pre-construction Planning

Notice to Proceed

Upon receipt of a work order from the State, BTA will issue a notice to proceed to the awarded contractor. The notice to proceed will act as the starting document for the contractor to begin their submittal and planning process.

Receive Bonds and Insurance

Prior to the contractor being allowed to access the site, BTA will receive and approve the performance and payment bonds and proof of the contractors insurance.

Detailed Schedule

The BTA Contract Controls Manager, with the support of the Construction Management Team & applicable roofing sub-contractor, will prepare, review and distribute a detailed construction schedule. The construction schedule will include durations and/or activities for the following activities:

- Pre-construction
- Completion and Approval of Safety Plans
- Completion and Approval of Site Submittal Review
- Completion and Approval of Technical Submittal Review
- Pre-construction Meeting
- Project Mobilization
- Badges & Security Approval

- Material Shipments
- Construction
- Re-roofing
- Repairs
- Punch List
- Post-construction
- Final Inspection
- BTA Close-out

Site Submittals

Health and Safety Plan

BTA and the applicable roofing sub-contractor will submit a site specific Health & Safety Plan, in accordance with the Contract Documents and the applicable local site requirements, to the applicable site for review and approval.

BTA will provide all documentation requested to facilitate that the local review is done in a timely manner. All comments from the site will be reviewed and incorporated in a timely manner in order to ensure formal approval by the applicable site representative.

Work Control Document

BTA and the applicable roofing sub-contractor will submit a site specific Work Control Document, in accordance with the Contract Documents and the applicable local site requirements, to the applicable site for review and approval.



BTA will provide all documentation requested to facilitate that the local review is done in a timely manner. All comments from the site will be reviewed and incorporated in a timely manner in order to ensure formal approval by the applicable site representative.

Other Site Submittals

Site submittals in order to execute a roofing project vary significantly from facility to facility. The BTA Project Manager will ensure that all of the local pre-construction submittals are provided to the local roofing point-of-contact for review and approval. These submittals may include, but not limited to:

Waste management plan
Lift Plan
Staging Plan
Security Forms
MSDS Sheets

Technical Submittals

BTA will receive the applicable Technical Submittals from our roofing sub-contractor. BTA's Project Manager will ensure that complete and accurate documentation is received in a timely manner. The following is a summary of the Pre-construction Technical Submittals:

Quality Assurance Documentation:

Roofing Contractor Pre-qualification Statement
Roofing Manufacturer's Acknowledgment
Materials List and Descriptions

To be completed by the Roofing Sub-contractor and signed by the Roofing Manufacturer

If a delay in delivery of an approved material occurs or if an approved material is no longer available, material substitutions may be proposed by the roofing sub-contractor

The Roofing Manufacturer's written approval of the proposed material substitution must be attached to the original Materials List & Descriptions

Quality Controller Appointment

Technical Information:

Shop Drawings of sheet metal components, and other details, as requested by the Designer.

List of Suppliers, from whom materials for this project will be purchased, with addresses and telephone numbers

Color samples of prefinished galvanized steel, as applicable (Color will be selected by the local site roofing point-of-contact prior to the Preconstruction Roofing conference)

Name, address, and telephone number of landfill for disposal of regulated and non-regulated waste

Temperatures Below 40 degrees Fahrenheit

If work is anticipated at temperature below 40 degrees F, submit proposed procedures and protection methods to be employed

Obtain acceptance prior to implementation

Upon receipt of the Pre-construction Quality Assurance Documentation and Technical Submittals, BTA's Designer will review, comment and return for correction the appropriate documentation.



Pre-Construction

Pre-construction Meeting

Upon receipt of the applicable approvals for the Safety Plan, Work Control Documents, Site & Technical Submittals BTA's Project Manager will coordinate, schedule and execute a Pre-construction Meeting.

The participants in the Pre-construction Meeting typically include the following individuals:

State Project Manager, as applicable
Local Site Roofing, Safety and Security Point-of Contact,
BTA Project Manager, On-site Manager and Designer
Roofing Contractor Project Manager, Safety Coordinator, Foreman and Quality Controller

The following is a summary of the agenda items to be discussed during the sit-down portion of the Pre-construction Meeting:

- Contract requirements
- Safety procedures
- Security procedures
- Quality management procedures
- Reporting procedures
- Plans to execute the work
- Scheduling
- Equipment to be used
- Task assignments
- Material storage procedures
- Roles and responsibilities of project personnel

Upon completion of the sit-down portion of the Pre-construction Meeting, the participants will conduct a walk-down of each roof area in the scope of work in order to discuss the following general agenda items:

- Material storage location
- Staging area
- Setup area
- Parking area
- Use of facilities
- Existing conditions.
- Impact on HVAC load and interior conditions
- Fume reduction procedures
- Lightning protection system or grounding system
- Color selection for prefinished galvanized steel

Security/Access Badge Requirements (not sure if we want to include)

All personnel working for or under sub-contract to BTA as part of the Project will need to obtain site specific security/access badges. In order to obtain a security/access badge, personnel will need to provide the site security office with government issued photo identification and an original birth certificate or valid passport. Only citizens of the United States of America will be able to apply for a security/access badge.



On-site Training Requirements

Upon completion of the Pre-construction Meeting and approval of the necessary documentation for the official commencement of the project by the local site roofing point-of-contact, BTA will ensure that the applicable personnel receive the necessary site-specific training. Training requirements for construction activity vary from site to site, but typically include sessions for the following work activities:

- Asbestos Containing Roofing Materials, as applicable
- Radiologically Contaminated Roofing Materials, as applicable
- Ladder Safety
- General Employee Training (GET)
- General Employee Radiation Training (GERT)
- Burn Permits
- Fall Hazard & Restraint
- Heat Stress
- PCB contamination

Mobilization and Material Delivery

The BTA Project Manager, in conjunction with the local site point-of-contact, roofing contractor project manager and on-site manager, will coordinate, schedule and execute the delivery of materials and the establishment of a lay-down area. All material deliveries must be completed in accordance with the contract documents and local site requirements.

Depending on the site and location of the work, materials will need to be screened and evaluated by local security representatives in order to ensure that no prohibited articles are being brought into secure areas of the facility.

Facility Access and Staging

As part of the material delivery, the BTA Project Manager and the Roofing Sub-contractor Project Manager will coordinate specific access and staging areas at each facility in order to meet the site specific safety and security requirements

For the entire first week of the project, the BTA Site Manager will perform vehicle inspections outside the secure area to prevent the accidental transport of prohibited articles into the secure area. After the first week, a weekly inspection will occur on each Monday, prior to returning to work after the weekend. A checklist of prohibited items will be prepared for each specific site consistent with their policies. The inspection process and resulting information will be captured in the daily safety/security checklist for the applicable days that it is required.

Violations found prior to entering the site will result in the following:

First Occurrence

Employee found in possession of the prohibited article will be sent home, unpaid, for the day. His/her name will be recorded on the safety/security form for submittal to BTA office.

Second Occurrence

Employee found to have prohibited articles in their possession a second time will be removed from the project permanently and sent home.



Construction Phase:Daily Site Manager Updates

The BTA project manager will receive daily updates from the site manager as to the status of the individual projects. Status updates will include:

- Schedule
- Construction
- Coordination
- Permits
- Changes in the work
- Delays
- Plan of the Day
- Issues

Daily Updates

The BTA Program and Project Manager will update the State daily on the progress of each project at all of the sites.

Weekly Progress Meetings

The BTA Project Manager will conduct a weekly teleconference progress meeting with each site for each individual project. The attendees for the progress meeting will include:

BTA Program Manager
BTA Site Manager
Other Local Site Representatives as determined by the local Roofing Point-of-Contact.
Roofing Contractor Superintendent (if possible)
Roofing Contractor Project Manager

Construction Issue Management

The BTA Program and Project Manager will ensure that project related issues are mitigated in a timely manner. Coordination of impromptu meetings will be facilitated as necessary. Issue resolution will be documented and distributed as necessary.

Document Review and Management

The BTA Program Manager will review the site manager documentation on a daily basis in order to track and respond to the following:

- Production
- Schedule
- Quality
- Safety
- Variances
- Site Concerns



Schedule Review and Management

The BTA Project Manager will provide updates to BTA Contract Controls. The schedule will be reviewed on a regular basis to determine if the production rates obtained by the roofing contractor are sufficient in meeting the completion dates. The Project Manager will be responsible to identify deficiencies in the current production rates and pursue alternative approaches, if necessary, to complete the projects on schedule.

Construction Safety Audit

BTA will coordinate, schedule and execute a minimum of one (1) Construction Safety Audits on each project. The Construction Safety Audit will be conducted by BTA's Certified Safety Professional.

The Construction Safety Audit Checklist will include the following general topics:

- General Issues
- Fire Protection
- Material Storage
- Equipment
- Fall Protection

A Construction Safety Audit Report will be completed

Construction Site Audit

BTA will coordinate, schedule and execute a minimum of two (2) Construction Site Audits on each project. The Construction Site Audit may be conducted by the BTA Program Manager.

The Construction Site Audit Checklist will include the following general topics:

- Executive Summary
- Safety & Health Issues/Evaluation
- Installation Procedures
- Progress of Work

A Construction Site Audit Report will be completed

BTA will conduct a random prevailing wage-rate compliance check on the roofing contractors performing services at each of the program sites. The intent of the audit is to confirm that wage rates, job classifications, work hours, jobsite postings and fringe benefits are correctly reported or displayed and are meeting the established requirements.

The audit procedures are as follows:

BTA will identify a window when contractor employees will have their pay stubs available at the site. Employee interviews will be conducted by BTA's site manager on two random individuals. Standard form (SF) -1445, Labor Standards Interview will be used to document the interview and record all necessary information. At the completion of the interview the form must be signed by the employee and the BTA representative.

BTA will compare the reported information with the established prevailing wage and benefit information currently published for each specific locality.

If deficiencies are found the contractor will be notified in writing and directed to take corrective actions. The contractor is required to respond in writing to explain the deficiencies and provide details on the corrective action taken.



Punchlist Audit

BTA will coordinate, schedule and execute a Punchlist Audit on each The Construction Punchlist Audit may be conducted by the Program Manager or Designer.

In general, the participants will walk each of the roof areas in the specific project scope of work in order to evaluate compliance with the Contract Documents. The BTA Program Manager or designer will identify any deficiencies in the observed work with the participants on a roof, by roof, basis.

BTA will issue a formal report, which may include site specific forms, to all the participants for review and approval.

Post-construction:

Final Inspection

Upon substantial completion of the project, the BTA Program Manager will coordinate, schedule and participate in an on-site Final Inspection.

The participants in the Final Inspection will typically include the following individuals:

State Project Manager, as applicable

Local Site Roofing Point-of Contact

BTA Program Manager, Designer and On-site Manager, as applicable

Roofing Contractor Project Manager Superintendent or Foreman, as applicable

In general, the participants will walk each of the roof areas in the specific project scope of work in order to evaluate compliance with the Contract Documents. Project Manager will identify any deficiencies in the observed work with the participants on a roof, by roof, basis.

BTA will issue a formal report to all the participants for review and approval.

Close-out Documentation

The following is a summary of the Post-construction Close-out Documentation:

Quality Assurance Documentation:

Technical Response to Roof Test Sample Variance(s), as applicable

Roof Performance Agreement

Conformance Statement

Roof Repair Agreement

As-built Information:

The BTA Program Manager, will coordinate the receipt of updated As-built Data Sheets The As-built Data Sheets summarize basis characteristics of newly installed roofing systems, including:

- Date of Installation
- Installing Contractor
- Duration of Contractor Warranty
- Duration of Manufacturers Warranty
- Type of Membrane
- Type of Insulation
- Type of Roof Surfacing
- Type of Counterflashing



As-built Drawings:

BTA's Project Manager will coordinate the completion of as-built drawings. The As-built Drawings will be transmitted. If not acceptable, comments must be returned to the BTA Program Manager to make all the necessary corrections. A new set of as-built drawings will then be delivered to the site for review and approval.

Database Update & Close-out (not sure if applicable)

Once the project is complete, the Database Update & Close-out process takes place to integrate the construction data, from all projects, back into the inventory and portfolio analysis. After closeout documentation is complete, BTA is able to generate a new multi-year budget that reflects the impact of work completed construction and repair work.

The following is a summary of the activities that need to be completed as part of the Database Update & Close-out:

- Updated As-built Data Sheets are input into the RoofSuite System.
- Updated AutoCAD Drawings
- Re-process RoofSuite data
- Quality Assurance and Control of update Database Reports & Drawings
- Modifications and Corrections as a result of the QA/QC Process
- Re-process RoofSuite data
- Prepare a capitalization spreadsheet that lists the roofs replaced and the design and construction costs associated with those installations.

Upon completion of these activities, the Program Management Team delivers Program & Site Summary Reports

QUALITY CONTROL Overview:

BTA's Quality Assurance Program encompasses a well-defined process in which each duty or task associated with the design, technical & manufacturer reviews, bidding, execution, testing and final acceptance is specifically assigned and documented by the applicable personnel.

The performance assurance provided by the Quality Assurance Program and documentation far exceeds that which would be offered to the Project under typical roofing manufacturers' guarantee/warranty programs. Manufacturers' guarantee/warranty programs have proven to be more of a disclaimer from responsibility and typically only require action if the replacement roofing system experiences a leak associated with the materials or workmanship. The disclaimers inherent in these roof guarantees are typically associated with the lack of a defined quality assurance and control plan in the overall roof replacement industry.

BTA has found from its over fifty (50) years of roof consulting that poor roof performance is primarily because of the multiplicity of disciplines involved in the design, manufacture, installation, and maintenance of roofs. Very few, if any, roof replacement projects have a single source identified as being primarily accountable for performance of the end product.

As a result of the recognized quality, consistency, and standardization of the BTA Quality Assurance Program, many of the largest roofing materials manufacturers, who typically carry the major burden of limited, long-term assurance; have agreed to participate in BTA's Quality Assurance and Control Plan in spite of increased accountability and elimination of guarantee/warranty fees.



Replacement Projects

For replacement projects, BTA's Quality Assurance and Control Plan requires the roofing materials manufacturer to acknowledge the suitability of roof system design for the particular project at hand, attest to the competence of the roofing contractor, actively participate in the roof construction quality assurance & control and provide final acceptance of the project. This is accomplished through the review and approval of the following documentation:

- Manufacturer's Pre-qualification Statement
- Manufacturer's Acknowledgement
- Materials List & Descriptions
- Quality Controller Appointment
- Quality Control Records
- Test Sample Reports
- Variance Resolution Reports
- Conformance Statement

The review and approval of this documentation not only pinpoints the single-source responsibility of the roofing materials manufacturer, but it also provides the State assurance of satisfactory performance or equitable relief should the roof system not perform as represented in the Contract Documents.

Repair Projects

For repair projects, BTA's Quality Assurance and Control Plan requires the roofing materials manufacturer to acknowledge the suitability of roof repair methodology for the particular project at hand, attest to the competence of the roofing contractor, provide concurrence on the specific materials to be used by the contractor and provide final acceptance of the project. This is accomplished through the review and acceptance of the following documentation:

- Materials List and Descriptions
- Quality Controller Appointment
- Defect Listing
- Conformance Statement

Since several components of the Quality Assurance Program are eliminated or minimized on roof repair projects, single-source responsibility for an extended performance period is significantly more difficult to obtain and implement. This is due to the fact that the impact of the repairs on the existing roofing system serviceability is difficult to quantify and measure. Consequently, it is difficult to procure ongoing performance assurance through direct documented ties to parties involved in the repair effort at reasonable cost.

However, the assurance resulting from technically defined specifications for repairs at defined locations, combined with controlled quality during execution and maintenance, is inherently superior to any existing program or process in the marketplace.

Roles and Responsibilities:

The intent of BTA's Quality Assurance and Control Plan is to obtain assurance of satisfactory roof installation and performance. In turn, roofing manufacturers were solicited to define the requisites to achieve 10, 15 and/or 20 years of satisfactory roof serviceability and help develop the procedures that would allow them to accept single-source responsibility for the performance of the applicable roof system.

The following is a listing of the roles & responsibilities of the involved parties in order to ensure successful implementation of the Quality Assurance and Control Program:



State of West Virginia- Project Owner

- Participate in the development of quantitative requirements for the execution of roof replacement and repair projects.
- Participates in the development of a roles and responsibility matrix in order to define the process flow for the Plan.
- Establish and effective roof maintenance program.
- Coordinate the necessary facility access to roof areas during the execution of the necessary semi-annual inspections.
- Provide timely feedback on any technical or operational issues with the installation process.
- Review and approve applicable documentation.

BTA

- Ensure that the roofing sub-contractors bidding on a project have been pre-qualified based on the specific requirements and parameters of the Project
- Verify that all bidders are currently manufacturer approved installers of the applicable roofing systems.
- Establish quantitative steps and standards (e.g., brooming, canvas tarps, chalk lines, test samples etc.), as applicable.
- Provide independent, full-time, on-site management.
- Notify the manufacturer, in writing, of deviations from the specifications as they occur on the project.
- Ensure that corrections to any deviations are acceptable, in writing, to the manufacturer.
- Train participants, as applicable
- Verification of contractor compliance.
- Perform a one-time Quality Assurance inspection approximately six months after completion of the replacement project.
- Document deficiencies identified during the Quality Assurance inspection and coordinate repair initiatives with the appropriate Roofing Contractor
- Verify completion of repairs during future site visits.
- Develop a roles & responsibilities matrix in order to establish the relationship and interfaces between participants (e.g., who approves, who reviews, who arbitrates, etc.).

Roofing Manufacturer

- Provide current listing of approved installers for applicable products.
- Review the design and specification of the roofing project for conformance to specific performance requirements.
- Review and approve bidding documents.
- Complete certification of contractor competence and acceptability.
- Review and accept Quality Assurance Program Documentation, as applicable.
- Participate and concur with variance resolution, as applicable.
- Conduct at-will inspection of work activities.
- Provide unconditional assurance of work outcome.

Designer

- Review submittals, including shop drawings, in order to ensure compliance with the Quality Assurance and Control Plan.
- Receive and review QCR's on a daily basis for each applicable project in order to ensure technical compliance and variance resolution in within the parameters of the Project Standards.
- Review Test Sample Reports and provide a summary report, with recommendations, the BTA Program and Project Manager.



On-site Manager

- Observe and report on the performance of the roofing sub-contractor.
- Identify the location of Roof Test Samples, as applicable.
- Complete Quality Control Records

Roofing Sub-contractor

- Utilize only manufacturer-approved materials.
- Provide an on-site, full-time, quality controller for the duration of the project.
- Resolve variances in accordance with the Contract Documents.
- Respond to deficiencies identified during the five (5) year performance period. Repairs during the Performance Period are to be provided at no cost to the Owner.
- Provide feedback to the Project in order to refine and improve procedures, documentation, standards and execution.
- Complete Contractor Certification indicating complete compliance with specifications.

Construction:

During the Construction Phase BTA's Quality Assurance and Control Plan will include implementation of the following activities:

Pre-construction Phase

BTA will ensure the receipt, review & approval of the following Pre-construction Phase documentation:

Quality Assurance Documentation

- Roofing Contractor Pre-qualification Statement
- Roofing Manufacturer's Acknowledgment
- Materials List and Descriptions
- To be completed by the Roofing Sub-contractor and signed by the Roofing Manufacturer
- If a delay in delivery of an approved material occurs or if an approved material is no longer available, material substitutions may be proposed by the roofing sub-contractor
- The Roofing Manufacturer's written approval of the proposed material substitution must be attached to the original Materials List & Descriptions
- Quality Controller Appointment

Construction Phase

BTA will ensure the receipt, review & approval of the following Construction Phase documentation:

Quality Control Record (QCR)

The Quality Control Record assures that the Roofing Contractor has followed the standards and procedures in the Specifications. This documentation keeps everyone informed of observed quality while the job is still underway and ensures a good flow of communications and documentation in order to immediately correct any problems or issues.

Defect Listings

The Defect Listing outlines the specific distresses which need to be repaired on a roof by roof basis. It provides assurance that the type and quantity of defect has been completed in the field and allows BTA to accurately complete the close-out process and maintain the integrity of the database.



Roof Test Sampling Procedures

Sampling Procedures

The Roofing Sub-contractor shall submit the specified number of samples of finished roofing membrane to the BTA On-site Manager. The sample results will be considered representative of the total roof area being replaced by the Roofing Sub-contractor and will be evaluated according to both ASTM D 2829 and ASTM D5076, as supplemented in the Construction Management Plan.

Test Sample Reports

If the test sample reports indicate variances from the above tolerances, BTA's Roofing Sub-contractor will submit the test sample reports to the Roofing Manufacturer and request the Roofing Manufacturer's written opinion concerning the roof system's acceptability and long-term performance.

Correcting Test Sample Variance

If the recommended corrective action is approved by the BTA Program Manager, the roofing sub-contractor shall act upon the recommendation of the Roofing Manufacturer. If the Roofing Manufacturer does not recommend a corrective action, the Roofing Sub-contractor will act on the decision of the BTA Program Manager.

Variance Resolution

Upon discovery or observation of work that varies from the Specifications, the BTA On-site Manager immediately attempts to resolve the variance jointly with the Roofing Sub-contractor. The following is an outline of the procedures used by the BTA On-site Manager for resolution of technical variances on the Project:

Level-I Resolution

Checks the Specifications to see if a prescribed solution to the variance is listed.

Speaks to the Roofing Sub-contractor's Foreman away from the roofing crew. Shows the Foreman that portion of the Specifications which pertains to the variance.

If the variance is resolved, the matter is closed.

If the variance is not resolved, the BTA On-site Manager advises the Roofing Contractor's Foreman that any further work prior to variance resolution, is subject to rejection. Records the variance and proceeds to Level-II Resolution.

Level-II Resolution

The BTA On-site Manager prepares and distributes a Special Report of Unresolved Variance and notes the issuance of the Special Report of Unresolved Variance in the Comments section on the Quality Control Record.

Contacts the BTA Project Manager and requests recommendation for resolution of the variance.

Discusses and reviews the BTA Project Manager's recommendation with the Roofing Contractor and requests compliance.

If the Roofing Contractor complies, the variance is resolved. The variance and its resolution are recorded on the Quality Control Record.





If the Roofing Contractor refuses to comply, the BTA On-site Manager proceeds to a Level-III Resolution.

Level-III Resolution

Informs the BTA Project Manager of the Roofing Contractor's refusal to comply with the Level-II Resolution; requests assistance.

Post Construction Phase

BTA will ensure the implementation & execution of the following post-construction documentation:

Six month Inspection for Replacement Projects

Six to twelve (6-12) months after the completion of a replacement project BTA's Project Manager will coordinate, schedule and execute a Quality Assurance Inspection. .

The participants in the Quality Assurance Inspection shall include the following individuals:

- State Project Manager, as applicable
- Local Site Roofing Point-of Contact
- Other Local Site Representatives, as determined by the local Roofing Point-of-Contact
- BTA Program Manager
- BTA Senior Design Consultant, as necessary

The following is a summary of the activities which need to be completed during the Quality Assurance Inspection:

Identify any applicable housekeeping issues and report any Life, Health and Safety concerns.
Verify that the roofing system is performing in accordance with the standards established by the Contract Documents and Manufacturer's Specification. The verification should include the following items, at a minimum:

- Base flashing delamination
- Blisters or ridges in the membrane or flashing
- Bitumen flow into or around the roof drain sump or flashing
- Aluminum coating
- Ponding water

The BTA Project Manager will prepare and distribute Meeting Minutes for review and comment by the participants.

If the roofing system is not performing in accordance with the Contract Documents and/or Manufacturer's Specification, the roofing sub-contractor, at no cost to the Owner, shall execute the necessary remedial action as directed by BTA.

If defects are present in the newly installed roofing systems which are not the result of materials or workmanship (e.g., membrane puncture, materials storage by other trades or work, debris, new penetrations, etc.), the BTA Project Manager will make a recommendation for the necessary repairs in order to ensure that the validity of the Quality Assurance Agreement is maintained for the applicable duration. The recommendation will be transmitted to the local site roofing point-of-contact and the Program Manager as an attachment to the Meeting Minutes.



No later than two (2) weeks after the completion of the inspection, the roofing sub-contractor shall execute any punch list or remedial activities. Upon complete, concurrence and acceptance by BTA and the local site roofing point-of-contact, the Roofing Sub-contractor shall submit the Roof Performance Agreement Repair Record.

Inspection for Repair Projects

Within six (6) months after the completion of a repair project, BTA's Program Manager will coordinate, schedule and execute a Quality Assurance Inspection. This inspection is performed only once, after completion of the repairs.

The participants in the Quality Assurance Inspection shall include the following individuals:

State Project Manager, as applicable

Local Site Roofing Point-of Contact

Other Local Site Representatives, as determined by the local Roofing Point-of-Contact

BTA Program Manager

BTA Senior Design Consultant, as necessary

The following is a summary of the activities which need to be completed during the Quality Assurance Inspection:

Conduct a representative sampling of the repairs completed on each roof area in order to ensure that the work is performing as intended in the documentation.

Within three (3) days of the meeting, the BTA Project Manager will prepare and distribute Meeting Minutes for review and comment by the participants.

If the roofing repairs are not performing in accordance with the Contract Documents and/or Manufacturer's Specification, the roofing sub-contractor, at no cost to the Owner, shall execute the necessary remedial action as directed by BTA.

No later than two (2) weeks after the completion of the inspection, the roofing sub-contractor shall execute any punch list or remedial activities. Upon complete, concurrence and acceptance by BTA and the local site roofing point-of-contact, the Roofing Sub-contractor shall submit the Roof Performance Agreement Repair Record.

BTA is experienced in providing Roof Services globally. Clients who have utilized BTA's patented process, software and expert staff include the US Department of Energy, Chicago Public Schools, US Air Force, US State Department, the City of Sarasota, City of Lansing, City of Colorado Springs, General Motors Corp, Ford Motor Company, Hillsborough County Schools, Detroit Public Schools, and many more across the US and worldwide.





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SIGNATURE

01/14/2013

DATE

TOTAL ROOF MANAGEMENT TEAM:

All BTA personnel involved with roof assessments, design, repair and replacements have several years of experience, and have been thoroughly trained on the differences, deficiencies, incompatibilities and general performance traits of multiple roof systems and material types, including built-up roofing, modified bitumen, single-ply, polyurethane foam, metal and shingles.

Our assessment team has evaluated over one billion square feet of roof and our design team develops specifications for \$15-20 million in replacements annually. Our Registered Roof Consultants have over 80 years experience in the roofing industry. BTA methodology encourages best practice development through ongoing technical training and education. BTA's management, technical support, RoofSuite specialists, customer service staff, and accounting team are also an integral part of BTA's success. BTA ensures that our clients' Roofing Projects are supported by educated and experienced roofing professionals. The follow team will be utilized as-needed for the State of West Virginia:

SCOTT HOFFMAN, PE, RRO, CDT

PROJECT MANAGER /PROJECT ENGINEER: 2011 - PRESENT

- 16 years of experience
- Manage budget, design, bidding and construction of multi-million dollar roofing projects
- Consult with clients to recommend and deliver cost-effective repair and design strategies according to financial and operational objectives
- Manage and directs specification development, vendor performance, engineering, testing and construction activities to meet project and organizational requirements

PRIOR EMPLOYMENT: Testing Engineers & Consultants, Inc. – Roofing Services Manager (2005-2011)
Roofing Consultants, Inc. – Vice President of Operations/Partner (2003-2005)
Building Technology Associates – Program Manager (1996-2003)

EDUCATION: B.S. – Civil/Construction Engineering, Lawrence Technological University, Southfield, MI

AFFILIATIONS: Roof Consultants Institute (RCI), Engineering Society of Detroit

CERTIFICATIONS AND TRAINING: Registered Roof Observer (#0175, 1997), Licensed Professional Engineer (State of WV PE #19658), Licensed Builder, Construction Document Technologist (CSI)





FIRM/TEAM QUALIFICATIONS

DENNIS MCNEIL, RRC, RRO, CCS

SENIOR ROOF CONSULTANT: 1968 - PRESENT

- 48 years of experience
- Specification designer and writer
- Roof repair, maintenance and replacement investigations
- Extensive experience in fixed price construction and requirements contracts, and in contract modification negotiation
- Oversee project investigations, surveys and analyses and develops reports
- Conduct roofing and waterproofing evaluation surveys, & analysis
- Conduct pre-construction conferences, construction quality control audits
- Reviews and develops project design drawings & specifications
- Consultant to A/E firms or new construction projects roof design

EDUCATION: B.A. UNIVERSITY OF DETROIT, Detroit, Michigan

AFFILIATIONS: The Construction Specifications Institute, 1968-present, Roof Consultants Institute, 1992-present, Chicago-Area Chapter, Roof Consultants Institute, 2003-present

CERTIFICATIONS & TRAINING: Registered Roof Consultant (#0110, 1993), Registered Roof Observer (#0124, 1996), Certified Construction Specifier (CSI)

ROBERT G. BEAUREGARD, RRO

ROOF ASSESSMENT MANAGER/SPEC WRITER: 2000 to Present

- 15 years of experience
- Oversee the planning and execution of all assessment efforts for BTA including activities such as aerial photogrammetry for use in CAD drawing production, as-built data collection, defect data collection and quality control
- Responsible for training, coordinating, and reviewing the work product of collection teams
- Coordinate the efforts of design firms, construction firms & site management firms
- Interact with team leaders and BTA/Client management to ensure that roof surveys are completed accurately, safely, and on schedule

PRIOR EMPLOYMENT: McNamee Industrial Services – Mechanical Engineer (1997-2000)

EDUCATION: B.S. *Mechanical Engineering*: Virginia Tech, Blacksburg, Virginia

AFFILIATIONS: Member of Roof Consultants Institute

CERTIFICATIONS & TRAINING: Registered Roof Observer (#0935, 2008, TSCA Title II AHERA Asbestos Inspector (June 2005) No. R050283-8293, OSHA Fall Hazard Training, National Safety Council First Aid Course





EDWARD J. LABUS, RRO, PMP, LEED

CONSTRUCTION & SAFETY MANAGER/LEED Green Associate: 2000 to Present

- 35 years of experience
- Works with designer to provide bid documents, bidding the work to the contractors
- Project manages the work for quality assurance, environmental compliance, and safety within the budget
- Works with roofing manufacturers to ensure quality and enforce warranties
- Manages appropriations between \$5 and \$15 million annually
- Coordinates environmental assessments of the work areas and with the operational departments in the affected areas

EDUCATION: B.S. Business Management, State University of New York, Buffalo, New York
1992-1993 Courses leading to MBA, Brigham Young University

AFFILIATIONS: Roof Consultants Institute (RCI), Project Management Institute (PMI), United States Green Building Council (USGBC)

CERTIFICATIONS & TRAINING: Registered Roof Observer (#04911, 2004), 60+ hours of roof related training from RCI and roof industry manufacturers, Project Management Professional (PMP), 50+ hours of project management training

NATALIE BOUDREAU

CAD MANAGER: 2012 - PRESENT

- 6 years of experience
- Responsible for gathering as-built data and defect observations, creating/modifying CAD roof schematics
- Responsible for creating and editing AutoCAD drawings for roof assessment, design and specification
- Perform tracking and management of design drawings and changes to the database

EDUCATION: Masters of Architecture, University of Detroit Mercy – Detroit, MI
Bachelors of Architecture with Certificate in Women's Studies, University of Detroit Mercy

MEMBERSHIPS:

2011 to Present: Associate Member of RCI, Inc, Great Lakes Chapter

2002 to 2007: American Institute of Architecture Students (AIAS)

2002 to 2007: Academic Honor Society, Delta Epsilon Iota





GREGORY WYS, RRO

ROOF ASSESSMENT TEAM LEADER/SITE MANAGER: 2006 to Present

- 6 years of experience
- Responsible for performing roof assessments and inspection— gathering as-built data and defect observations, creating/modifying CAD roof schematics
- Plan and coordinate field activities
- Ensure all appropriate site-specific safety and security measures are understood and followed
- Responsible for creating and editing AutoCAD drawings for roof assessment, design and specification projects
- Perform tracking and management of design drawings and changes to the database

MILITARY EXPERIENCE: 1989-1998: United States Army Reserves Ft. Rucker, AL
Selfridge ANGB. MI
Certificate of Merit 7/93 United States Army Reserve

EDUCATION: Associate of Applied Science - Computer Drafting and Design, ITT-Technical Institute

CERTIFICATIONS & TRAINING: Registered Roof Observer (#0994, 2008), 30-hour OSHA Construction Safety & Health Training, 9/00-1/01: Trained as QS-9000 auditor, Certified Asbestos Inspector

KENNETH MICHALAK, RRO

DATA COLLECTION/CADD TECHNICIAN: 2010 to Present

- 3 years of experience
- Responsible for performing roof assessments – gathering as-built data and defect observations
- Create/modifie CAD roof schematics and populates RoofSuite
- Responsible for creating and editing AutoCAD drawings for roof assessment, design and specification projects
- Perform tracking and management of design drawings and changes to the database

CERTIFICATIONS & TRAINING: Computer Aided Design, Civil Drafting, AutoCAD, CATIA V5, Agtek Earthwork Systems, Registered Roof Observer (RRO)

ROBERT CHANDLER, RRO

ROOF FIELD SPECIALIST/ ROOF ASSESSOR: 2012 to Present

- 27 years of experience
- Responsible for collecting current as-built data and providing roof inspections and assessments
- Record and reports defects and deficiencies
- Ensure all site-specific safety and security measures are followed
- Plan and coordinate field activities
- Provide recommendations for roof maintenance and roof life-extension

EDUCATION, TRAINING & CERTIFICATION:

- 2001 Building Products University (BPU) Basic Roofing Technology
- 2000 Roof Consultants Institute (RCI) Rooftop Quality Assurance Course (Presenter)
- 1993 Roof Consultant Institute (RCI) Beginning and Advanced Consulting Seminars
- 1992 Roof Consultants Institute (RCI) – Registered Roof Observer (RRO)
- 1990 Roofing Industry Educational Institute (RIEI) Roof Inspection, Diagnosis and Repair
- 1988 Roofing Industry Educational Institute (RIEI) Basic Roofing Technology
- OSHA Safety Training





SUBCONSULTANTS:

BTA utilizes sub consultants on an as-needed and per project basis. BTA is has a full Team of Roof Experts and has all capabilities to provide the requested services to the State f West Virginia.

BTA's team of Roof Professionals are fully capable to provide the requested services to the West Virginia State Capitol Building as well as several additional projects that may arise.

BTA and the proposed team understand and accept the scope of work as stated in the Solicitation GSD 136423.

BTA does not have any litigation, arbitration or negotiated/settled history with previous clients.





STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS

To all to whom these presents shall come Greeting
"Know Ye" That The State Board of Registration for Professional Engineers
of the State of West Virginia, reposing special confidence in
the Intelligence, Integrity and Discretion of

Scott R. Hoffman

DOES IN PURSUANCE OF AUTHORITY VESTED IN IT
by law hereby certify that he having submitted
satisfactory evidence of his ability and experience is a

REGISTERED PROFESSIONAL ENGINEER

Registration Number 19658

To Hold and use such title in the practice of his profession,
subject to the conditions prescribed by law.



Given under the hand of the
Seal of the Board at the Capitol in the
City of Charleston,
This 23rd day of April
in the year of our Lord 2012
and of the State
the One Hundred Forty-Eighth

Members of the Board

James D. Thomas, Jr.

Richard D. Delynas

Blair S. Stiles

William E. Diersen

Roof Consultants Institute



Be it known that

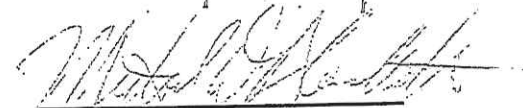
Scott Hoffman

having given satisfactory evidence of necessary qualifications with regard to character, education, and experience as required by the Roof Consultants Institute, was examined - duly registered - awarded this certificate and is henceforth recognized as a

Registered Roof Observer

In testimony whereof Registration Number 0175 is issued under the Seal of the Institute and the signatures of the President and Secretary, this 25th day of March, 1997.


President of the Institute


Secretary of the Institute



Advancement
of Construction
Technology

Construction Documents Technologist

This certificate of achievement attests that

Scott R. Hoffman, CDT

has successfully completed the Construction Documents Technology examination, demonstrating a knowledge of general conditions of the construction contract in common use and CSI recommended procedures for project manual organization as prescribed by the Certification Committee of

The Construction Specifications Institute

Richard A. Eustis FCSI, CDT

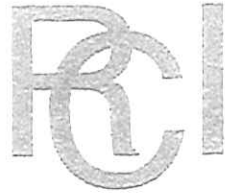
Richard A. Eustis, FCSI, CDT
Secretary
The Construction Specifications Institute

Michael D. Chambers

Michael D. Chambers, CCS, CSI
Chairman
Certification Committee

July 1, 1995

Roof Consultants Institute



Board of Registration

Be it known that

DENNIS J. MCNEIL

having given satisfactory evidence of necessary qualifications with regard to character, education, and experience as required by the Roof Consultants Institute, was examined - duly registered - awarded this certificate and is henceforth recognized as a

Registered Roof Consultant

In testimony whereof Registration Number 110 is issued under the Seal of the Institute and the signatures of the President and Secretary, this 30th day of March, 19 93.



George F. Henry
Chairperson, Advisory Panel

Anthony Quinn
Secretary of the Institute

J. F. O'Leary
President of the Institute

Roof Consultants Institute



Be it known that

Dennis McNeil

having given satisfactory evidence of necessary qualifications with regard to character, education, and experience as required by the Roof Consultants Institute, was examined - duly registered - awarded this certificate and is henceforth recognized as a

Registered Roof Observer

In testimony whereof Registration Number 0124 is issued under the Seal of the Institute and the signatures of the President and Secretary, this 25th day of March, 1997.


President of the Institute


Secretary of the Institute



The Construction
Specifications
Institute

CERTIFIED CONSTRUCTION SPECIFIER

This is to certify that

Dennis J. Mc Neil, CSI, CCS

has successfully completed the Certified Construction Specifier examination,
demonstrating the required experience, knowledge and ability in the preparation of written construction
documents as prescribed by the Certification Committee of The Construction Specifications Institute.

A handwritten signature in cursive script that reads "John P. McCaffrey".

John P. McCaffrey, FCSI, CCS, AIA, SCIP
Secretary
The Construction Specifications Institute

A handwritten signature in cursive script that reads "Lisa Turner".

Lisa Turner, CSI, CCPR, LEED AP
Chairman
Institute Certification Committee

This certification expires -
June 30, 2010

Continuing education required for renewal.

Roof Consultants Institute



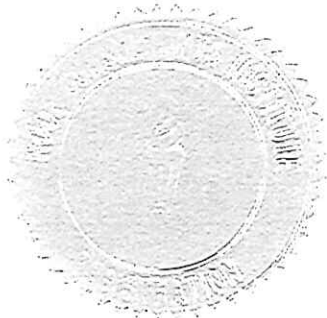
Be it known that

Edward J. Labus

having given satisfactory evidence of necessary qualifications with regard to character, education, and experience as required by the Roof Consultants Institute, was examined – duly registered – awarded this certificate and is henceforth recognized as a

Registered Roof Observer

In testimony whereof Registration Number 491 is issued under the Seal of the Institute and the signatures of the President and Secretary, this 2nd day of April, 2004.

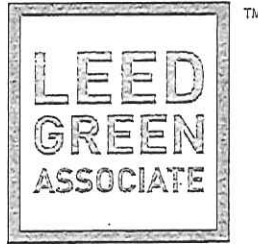


A handwritten signature in dark ink, appearing to read 'W. J. Fall', written over a horizontal line.

President of the Institute

A handwritten signature in dark ink, appearing to read 'Patricia A. Denny', written over a horizontal line.

Secretary of the Institute



GREEN BUILDING CERTIFICATION INSTITUTE HEREBY CERTIFIES THAT

Edward J Labus

HAS ATTAINED THE DESIGNATION OF

LEED GREEN ASSOCIATE

BY DEMONSTRATING THE KNOWLEDGE AND UNDERSTANDING OF GREEN BUILDING PRACTICES AND PRINCIPLES NEEDED TO SUPPORT THE USE OF THE LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED®) GREEN BUILDING RATING SYSTEM™.

Handwritten signature of Jay R. ...

Chairperson

Handwritten signature of Peter Templeton

Peter Templeton, GBCI President

March 5, 2011

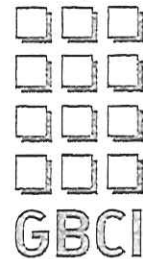
Date Issued

10204843

Identification Number

March 4, 2013

Valid Through



THIS IS TO CERTIFY THAT

Edward J. Labus

HAS BEEN FORMALLY EVALUATED FOR DEMONSTRATED EXPERIENCE,
KNOWLEDGE AND SKILLS TO LEAD AND DIRECT PROJECT TEAMS AND IS HEREBY
BESTOWED THE GLOBAL CREDENTIAL

Project Management Professional

IN TESTIMONY WHEREOF, WE HAVE SUBSCRIBED OUR SIGNATURES UNDER THE SEAL OF THE INSTITUTE.

Philip R. Diab

Philip R. Diab - Chair, Board of Directors

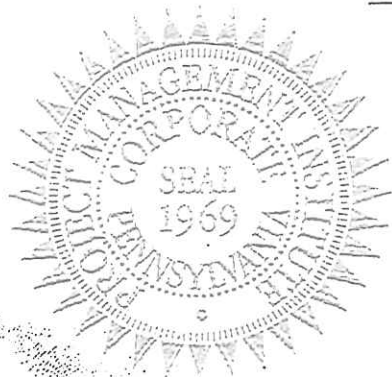
Gregory Balestrero

Gregory Balestrero - Chief Executive Officer and President

PMP® Number 495347

PMP® Original Grant Date 16 November 2007

PMP® Expiration Date 15 November 2011





Be it known that

Robert G. Beauregard, RRO

having given satisfactory evidence of necessary qualifications with regard to character, education, and experience as required by RCI, Inc. was examined - duly registered - awarded this certificate and is henceforth recognized as a

Registered Roof Observer

In testimony whereof Registration Number 0935 is issued under the seal of RCI and the signatures of the President and Secretary, this 21st day of June, 2008.

RCI, Inc.
1500 Sunday Drive, Suite 204
Raleigh, NC 27607
(800) 828-1902 □ www.rci-online.org



John M. Wilcox

President

[Signature]

Secretary



Be it known that

Gregory N. Wys, RRO

having given satisfactory evidence of necessary qualifications with regard to character, education, and experience as required by RCI, Inc. was examined - duly registered - awarded this certificate and is henceforth recognized as a

Registered Roof Observer

In testimony whereof Registration Number 0994 is issued under the seal of RCI and the signatures of the President and Secretary, this 15th day of November, 2008.

RCI, Inc.

1500 Sunday Drive, Suite 204
Raleigh, NC 27607
(800) 828-1902 □ www.rci-online.org



Johann M. Wilkes

President

[Signature]

Secretary

INNOVATIVE TRAINING PUBLISHERS, INC.

1516 Corbett – Lansing, Michigan

Phone (517) 204-0572

www.easyitp.com

Gregory N. Wys

Social Security: XXX-XX-8642

Has successfully completed a Michigan and EPA approved course in accordance with Title II of the Toxic Substance Control Act, 40 CFR 763 (AHERA) as amended 1994, MI P.A. 440 of 1988 as amended and 40 CFR Part 61 (NESHAP Revision).

FOR:

40 - HOUR INITIAL ASBESTOS ABATEMENT TRAINING FOR CONTRACTORS AND SUPERVISORS

Course Dates: March 5 to 9, 2012

Certificate Number: CSI-2012-18

Exam Date(s): March 9, 2012

Expiration Date: March 9, 2013

Training Location: 1516 Corbett – Lansing, MI 48910

John Sharnetsky

John Sharnetsky, Instructor



Be it known that

Kenneth R. Michalak, RRO

having given satisfactory evidence of necessary qualifications with regard to character, education, and experience as required by RCI, Inc. was examined - duly registered - awarded this certificate and is henceforth recognized as a

Registered Roof Observer

In testimony whereof Registration Number 1463 is issued under the seal of RCI and the signatures of the President and Secretary, this 21st day of April, 2012.

RCI, INC.

1500 Sunday Drive, Suite 204
Raleigh, NC 27607
(800) 828-1902 □ www.rci-online.org



A handwritten signature in cursive script, appearing to read 'Gordon J. Ward III', written over a horizontal line.

President

A handwritten signature in cursive script, appearing to read 'John L. Wilson', written over a horizontal line.

Secretary



OVERVIEW/BACKGROUND:

With over 50 years of experience, BTA's team of specialists is among the most respected in the industry providing international delivery of professional architectural, engineering and consulting services specifically for roof systems. BTA assists our clients in understanding what roof assets they have, what is required for optimal mission and financial performance, as well as the cost to meet those requirements. BTA is experienced in providing a full scope of services, including all condition assessments and evaluations, utilizing our patented process and proprietary RoofSuite software, followed by strategic and scientific recommendations, design, specification, quality assurance and construction management.

Founded in 1959, BTA pioneered the concept of managing roofs as financial assets to preserve capital and minimize costs. Working with the US Air Force in the early 1970s, BTA developed a proactive model for roof management, based on a proactive philosophy of anticipating and correcting small or potential problems before they become big ones. BTA was soon offering full-service roof asset management, developing methodology to predict with great accuracy the most likely outcomes of various forms of roof intervention (e.g., the impact of repair instead of replacement).

In 1985, BTA introduced computer technology specially developed to leverage their experience and create an automated, standardized approach to roof asset management. Since then, BTA has amassed a constantly-growing knowledge base that presently covers more than 300 million square feet of roofing areas, and uses a unique, proprietary process for applying computer data in managing roof assets

BTA was the first to market this type of holistic Total Roof Asset Management approach, delivering optimized roofing strategies by combining unbiased, expert condition assessment with a sophisticated, computerized database. BTA's approach allows for a seamless transition from condition assessment and life-extension recommendations to specification development, construction management, and quality assurance of roof systems. BTA is in the business of protecting your roofing investment and transforming roofs from unpredictable expenses (devouring cash and capital), into proactively managed assets. Using sophisticated financial modeling and roof assessment techniques, BTA will reduce roofing costs, decrease leaks, and improve the life of your roofing inventory.

The BTA team has provided Roof Design, Engineering & Construction Management Services for projects globally and is experienced in managing projects from the beginning design phases to construction completion. We have expertise in all types of roof systems and our recommendations have been used as the template for some of the world's largest industrial and commercial organizations, Federal Agencies, and school districts.

OUR FOCUS:

Our customers are our HIGHEST priority. We pride ourselves in delivering quality services and recommendations in the very best interest of our clients. Our approach will place the State's needs and cost savings first. We are neither a contractor nor a representative of any manufacturer. BTA is a professional organization representing the best interests of our clients and an industry leader in the **assessment, design, development, construction, performance, and maintenance of roofing and waterproofing systems**. BTA's team is made up of experienced and educated professionals, so you can trust that your roof asset is in the right hands for any and all of your roofing needs. **We Are Your One Source For Total Roof Management**

PRINCIPLES:

Brian Donnelly, President

Peter Schreiber, VP of Operations/ Owner

Jon Schreiber, Treasurer/ Owner

Ed Schreiber, Owner





BUSINESS TYPE: Corporation

LOCATION:

BTA is headquartered in Oak Park, MI. We also have offices located in El Segundo, CA, Homewood, IL, Washington, DC and Tampa, FL but we deploy our resources worldwide and have BTA staff and consultants stationed nationwide. BTA accommodates to each client and ensures quick responses to the needs of all our global customers. BTA's Regional Director, based on Washington, DC, will serve as the direct contact for the State of West Virginia to schedule and coordinate availability and immediate responses for work to be performed by BTA's expert staff.

OFFICES:

21850 Greenfield Rd.
Oak Park, MI 48237

2060 Ridge Road, Lower Level, #4
Homewood, IL 60430

3001 North Rocky Point Dr. E
Suite 200
Tampa, FL 33607

400 Continental Blvd.
6th Floor
El Segundo, CA 90245

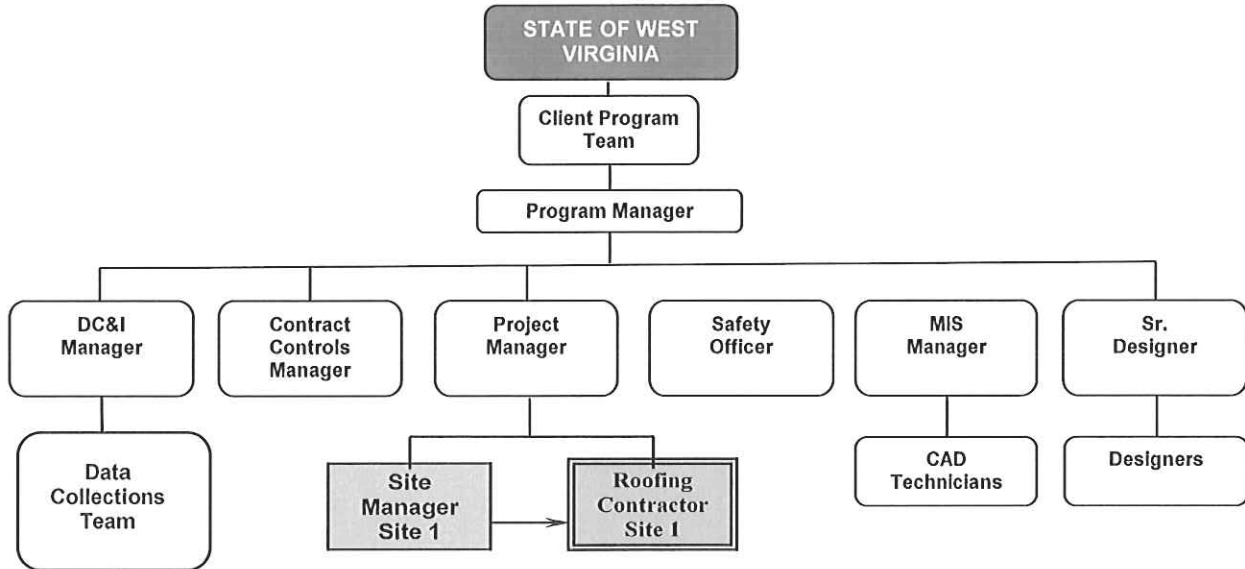
1776 I Street, NW
9th Floor
Washington, DC 20006

BTA TEAM CAPABILITIES OVERVIEW:

- Complete Roof Condition Evaluation & Asset Assessment utilizing BTA's proprietary RoofSuite® software (including infrared moisture surveys where required)
- Database Collection & Database Management of Complete Roof Assets Providing Statistical Analysis to Determine Roofing Asset Life-Cycle Analysis, along with Financial and Budgetary Modeling of both Constrained and Unconstrained Budgets
- Expert Evaluations & Strategic Recommendations
- Roof Design & Engineering Services
- Comprehensive and Competitive Product Specification & Project Scope of Work Details
- Roof Construction and Roof Maintenance Bid Specifications
- Roofing Project Bidding Services and Assist in the Sourcing of Qualified Roofing Sub-Contractors to Ensure a Viable, Efficient, Well Subscribed & Secure Bidding Process for Roofing Projects
- Construction Management Services & On-Site Safety Management Services of Roofing Sub-Contractors during Roof Maintenance and Roof Construction (new & replacement) Projects
- Performance Guarantee/Warranty for all Roofing Projects
- Roof Response/Customer Service, Repair & Maintenance Management Services and Ensure Prompt/Timely Response to Various Site Roofing Maintenance Issues.
- Support and Advice on Various Sustainability Issues, Energy Savings & Environmental Enhancements for all Roofing Projects
- All other Roofing Related Support & Management as Required as the one source for **TOTAL ROOF MANAGEMENT**



PROPOSED PROJECT ORGANIZATIONAL CHART:



- STATE OF WEST VIRGINIA
- BTA Key Participants
- BTA Support Staff
- Subcontracted

BTA's team has the ability and expertise to provide all requested Roof Services.





CLIENT/LOCATION: **Lexington Center/ Rupp Arena (Lexington, KY)**

PROJECT: Roof Assessment & Repair Project

SUMMARY OF PROJECT: Rupp Arena was preparing a \$5 million roof replacement project in the upcoming year. Following a request to provide the design services for the 230,000 SF replacement, BTA suggested our procedure and assessment approach to locate the deficiencies of the roof and provide life extension opportunities as opposed to going right into the replacement project. BTA provided the \$8,500 on-site inspection of each building roof area documenting the existing components of construction, and the conditions (both atypical as well as common) affecting the roof system serviceability.



Based upon the correlation of the preliminary investigation findings with known technology and experience, BTA submitted a report including a summary of observations, an opinion of the projected roof system performance, and an outline of available roof treatment options and costs deemed presentable.

BTA's assessment and roof experts were able to provide a \$180,000 life extension repair option and recommendations, saving the Lexington Center millions in a costly replacement and adding 5-8 years of life to the roof. BTA was awarded the design and construction management phases following the provided recommendations. BTA developed the repair specifications, provided bidding/award services and managed the project until construction completion. BTA services and procedures associated with the design project included: scope setting meetings, development and review of contract documents, bid documents, cost control and contractor qualification, on-site pre-bid meeting, bid process and acceptance/recommendation of proposals, construction management plan (from pre-construction to post-construction including quality and safety assurance documentation), as well as project close-out.

DATES: Assessment Completed 2012, Design Completed 2012, Construction Scheduled for Completion 2013

COST: Roof inspection Cost: \$8,500.00, Design Cost: \$ 10,000

POINT OF CONTACT: William Owen, President

PHONE/EMAIL: (859) 233-4367 x. 3210/bowen@rupparena.com

CLIENT/LOCATION: **Will County Health Department (Joliet, IL)**

PROJECT: Roof Consulting Services

SUMMARY OF PROJECT: BTA performed an on-site inspection of each building roof area in order to document the existing components of construction and the conditions affecting the roof system serviceability and the availability of treatment options. BTA provided replacement and repair cost estimates, serviceability estimates, adjusted serviceability estimates, optimal repairs, minimum repairs and specification to repair these defects at least temporarily and a recommended scope of work. Following completion of the Roof Assessment Report, BTA was awarded the next phases of Design, Bidding/Contract Award, and Construction Administration. BTA returned to the project site to gather field information for the development of the technical specifications and details. Then the BTA Team produced the specifications and detail drawings necessary to define the roofing and related work, and combined these technical documents, along with bidding and contract documents provided by The County of Will, into a project manual suitable for obtaining competitive bids. The bidding and contract award phase included Pre-Bid Meeting at the project site, issued addenda to the project manual and availability for technical counsel as requested during the bidding period. BTA reviewed bids received, and negotiated/awarded the contract.

Will County Health Department
and Community Health Center

DATES: Completed 2012

COST: Assessment Phase: \$3,970.00, Design Phase: \$7,055.00, Bidding/Contract Award Phase: \$2,065.00.00

Construction Administration Phase: \$9,765.00

POINT OF CONTACT: John Cicero, Executive Director

PHONE/EMAIL: 815-750-8982, jcicero@willcountyhealth.org





CLIENT/LOCATION: **Chicago Public Schools (Chicago, IL)**

PROJECT: Various As-Needed Roof Services



SUMMARY OF PROJECT: BTA was retained by CPS to provide Roof Services for various projects for the school system since 2009. Services have included project design & engineering, roof inspections, infra-red moisture survey, nuclear moisture survey, detailed lifecycle roof assessments, warranty commissioning, specification review, construction management and inspection. These services have been provided to over 20 schools including Theodore Roosevelt High School, Herzl Elementary School, Burbank Elementary, Brown Academy, Stagg Elementary and Hyde Park High School.

Project Examples:

Theodore Roosevelt High School

BTA was retained by CPS to provide Design & Specification Review along with Pre-Out to Bid Services for this 114,000 SF re-roofing project. Following the design phase and upon Contractor award, BTA acted as CPS's daily on-site Roof Project Manager including progress reporting, punch-list, warranty, reporting and construction audits.

Herzl Elementary School

The project consisted of a full roof replacement with a total project re-roof cost of approximately 1.1 Million. The project required raising parapets, adding insulation and re-working existing drainage. BTA performed in Four (4) phases for this project. 1) BTA first completed an Inspection and detailed Roof Assessment to generate current conditions, defect summary, moisture content and project budgets. 2) BTA was retained as part of the Architect's team to complete full Roof Design and Specifications. The design was an energy efficient multi-ply, white cool roof with long term efficiency and initial cost as key factors for this project. 3) BTA acted as the Construction Observer on behalf of the owner. 4) BTA did project close-out, warranty audits and final performance reports.

DATES: 2009 – ongoing projects

COST TO DATE: \$240,000

POINT OF CONTACT: Michael Zanco, CPS Assessment Manager

PHONE/EMAIL: 312-960-8145/ mzanco@cannondesign.com

CLIENT: **Prairie Shores Apartments (Chicago, IL)**

PROJECT: Roof Repair and Replacement Project



SUMMARY OF PROJECT: BTA provided design Services for the re-roofing of the Chicago Apartment tower 2801, and for roof repairs on apartment tower 2851. BTA personnel gathered field information for the development of the technical specifications and details for the re-roofing and repairs, and then developed detailed drawings and specifications. BTA provided the technical documents along with a suggested bid proposal form to be completed by the potential bidders. BTA also conducted the pre-bid meeting at the project site. Following award, BTA also provided services throughout the construction phase including review of the contractor's submittals, ten site visits, technical counsel as needed, attended meetings, and change order evaluations. At project completion, BTA conducted a Punch list Inspection, issued a roof status report and performed a closing audit.

DATES: Completed 2010

COST: \$19,031.00

POINT OF CONTACT: John L. Bieg, Property Manager

PHONE/EMAIL: (312)842-2434, biegj@draperandkramer.com



A/E SERVICES FOR MAINT CAPITOL ROOF REPLACEMENT
GSD136423





CLIENT/LOCATION: Pinellas County (Pinellas County Florida)

PROJECT: Three-Year Roof Consulting Contract

SUMMARY OF PROJECT: BTA was awarded the Roof Consulting Services contract to provide as-needed services for roof projects which include all assessments, budgeting, cost estimating, value engineering, roof design, specification and construction management.



Project Examples:

Pinellas County Courthouse

BTA provided Design and Project/Construction Management for the Pinellas County, Old Court House Building Roof Repair and Replacement Project. BTA services and procedures associated with the project included: Scope Setting Meetings, Design Field Work, Pre-Design Review, Development and review of Contract Documents, Bid Documents, Cost Control and Contractor Qualification, Development of the Bid List, On-site Pre-Bid Meeting, Bid Process and Acceptance/Recommendation of Proposals, Construction Management Plan (from pre-construction to post-construction including quality and safety assurance documentation), as well as Database update and Project Close-out.

Pinellas County Jail

BTA provided Roof Assessments and Evaluations of 23 buildings plus 10 Guard Towers. BTA prepared full Roof Assessment Reports for each facility on the Jail Campus, and provided Pinellas County with the following information: a detailed Defect Report presented in a Roof Plan CAD Drawing, remaining useful life evaluation of each roof, a detailed repair scope and specification including a budget for making the suggested repairs, and full CAD drawings for each roof noting what the existing roof system is, location of all roof penetrations and visual defects shown with quantities. BTA established all security restrictions and proper procedures in the initial project meeting with the County and State Police.

DATES: 2012- 2015

COST: \$80,000 annually

POINT OF CONTACT: Joe Manninen

PHONE/EMAIL: 727-464-6151, jmanninen@co.pinellas.fl.us

CLIENT/LOCATION: Bay Arenac Independent School District (Bay City, MI)

PROJECT: Roof Consulting Services

SUMMARY OF PROJECT: BTA has performed roof audits, assessment and reports for three buildings for Bay Arenac Independent School District which included a life-expectancy of the roof, a budgeting plan, and recommendations for repairs and potential replacement. Currently, BTA is working with the school district on upcoming design for replacement projects. BTA has recently been awarded a three-year contract to provide annual roof consulting services for all of the assessment, design and construction management for the school system.



DATES: 2012-2015

COST: Three Building Assessment: \$5,400.00, Three year Roof Consulting Contract: \$13,900.00 annually

POINT OF CONTACT: Dave Bourdon, Director of Operations

PHONE/EMAIL: 989-667-3270, bourdond@baisd.net





CLIENT/LOCATION: Honeywell Federal Manufacturing & Technology, NNSA - DOE (Various locations across the U.S. (including Idaho Falls, ID, Sandia, CA, Albuquerque, NM, Los Alamos, NM, & Amarillo, TX)



PROJECT: Roof Asset Management Program

SUMMARY OF PROJECT: The Roof Asset Management Program (RAMP) is a Department of Energy Complex-wide program to manage roof inventory at multiple sites under one contract. Partners in this program include the Kansas City Plant, Idaho National Laboratory, Sandia National Laboratory, Pantex, Y-12, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, and Nevada National Security Site. Services provided include inspection, assessment, planning, cost analysis, design, coordination and management of roof maintenance and construction site management and observation.

DATES: 2009-2013

COST: Contract Value- \$75M

POINT OF CONTACT: Jim Schubert, Program Manager

PHONE/EMAIL: 816-997-5307, jschubert@kcp.com

2008 GSA Best Practice Achievement Award from NNSA

PROJECT: National Nuclear Security Administration (NNSA) Roof Asset Management Program

SITES: Kansas City Plant (Kansas City, MO), Pantex (Pantex Plant, Carson, TX), Y-12 (Y-12 National Security Complex, Oak Ridge, TN), Los Alamos National Laboratory (Los Alamos, NM), Lawrence Livermore National Laboratory (Livermore, CA), Nevada Test Site (Las Vegas, NV)

BTA's ROLE: Manage/execute roof design, repairs, replacement and site management on all six sites for NNSA

KEY ACCOMPLISHMENTS:

- *Added \$19.3 million in value to our roofing portfolio through life extending repairs.*
- *Saved \$7 million in construction costs*
- *Increased average remaining life of roof inventory by 25 percent*
- *Replaced 1.9 million square feet of roof with more energy efficient sustainable roofs*
- *Eliminated \$46 million in deferred maintenance from the 2003 congressional baseline.*
- *Realized energy cost savings exceeding 50 percent.*
- *Achieved exceptional safety record*

Recognition - NNSA Roof Project Completed Two Years Early and 80 Percent under Budget

PROJECT: National Nuclear Security Administration (NNSA) Roof Asset Management Program

SITES: Nevada Test Site

BTA's ROLE: Manage/execute roof design, repairs, replacement and site management

KEY ACCOMPLISHMENTS:

- *Savings of \$7.8 million for U.S. taxpayers*
- *Completed 2 years ahead of scheduled completion*

2009 Supplier of the Year Awards from Honeywell FM&T

PROJECT: NNSA/DOE Roof Asset Management Program

BTA's ROLE: Manage/execute roof design, repairs, replacement and site management on multiple sites for the DOE

KEY ACCOMPLISHMENTS:

- *2009 included energy cost savings of over \$500,000 through replacing roofs with more energy efficient, sustainable roofs*
- *Successful completion of 17 projects valued at \$16 million*
- *Record 29 percent savings in cost per square foot (based on a record low average of \$16.31 per square foot versus \$23.12 per square foot in 2008)*
- *Several examples of outstanding emergency responsiveness to storm and wind damage.*



2009 Defense Programs Award of Excellence

PROJECT: National Nuclear Security Administration (NNSA) Roof Asset Management Program

BTA's ROLE: Manage/execute roof design, repairs, replacement and site management on multiple sites for the DOE

KEY ACCOMPLISHMENTS:

- Executed 15 roofing projects totaling \$16.02 million at a record average
- Added \$1.8 million in value to NSE's roof portfolio through life extending repairs
- Realized life energy cost savings of \$539,758

LAST FIVE CLIENTS IN WHICH BTA HAS CONDUCTED BUSINESS WITH (IN ADDITION TO ABOVE PROJECT EXAMPLES):

CLIENT/LOCATION: **New Mexico State University (Las Cruces, NM)**

SUMMARY OF PROJECT: BTA was awarded in October 2012 a contract with the University to provide as-needed on-call Roof Consulting and Engineering Services. Services include roof assessment, life extension recommendations, design services and construction management. BTA began the assessment of 79 campus buildings in December and is schedule for completion in January 2013.

NMSU has full access to RoofSuite. The progress of the building assessments is available through the software that is accessed through the BTA website. BTA will present life expectancy, budgets, defects, repair and replacement options, prioritized lists and left extension recommendations.



Following approval, BTA will provide all roof design, specification, bidding & award, and construction administration services for upcoming projects. BTA will also provide on-going yearly inspections, our Emergency Response Program, and Network of Pre-Qualified Contractors made available to the University.

POINT OF CONTACT: Isaac Paz, Structural Maintenance Supervisor

PHONE/EMAIL: (575) 646-1598, czap@nmsu.edu

CLIENT/LOCATION: **LA World Airports (Los Angeles, CA)**

PROJECT: Roof Survey Services

SUMMARY OF PROJECT: BTA was awarded the Roof Survey Contract with the LA World Airports to perform assessments on Terminals 1 through 8, TBIT, Theme Building, First Flight Child Care Center, 96th Street, Administration West Buildings, Maintenance Administration and Maintenance Yard Buildings, Administration East, Telecom Building, Outlying Buildings and the Van Nuys Airport facilities. The survey includes the development of roof plans indicating square footage dimensions, plotted defects, database management and recommendations for repair and replacement options. BTA will present life extension options, cost estimates and cost saving solutions.

POINT OF CONTACT: Tyrone Jessamy, Airports Maintenance Superintendent

PHONE/EMAIL: (424) 646-7900, tjessamy@lawa.org





DEMONSTRATED EXPERIENCE

CLIENT/LOCATION: **Hillsborough County Public Schools (Tampa, FL)**

PROJECT: District Roof Assessments

SUMMARY OF PROJECT: BTA performed roof assessments and created a database to assist Hillsborough County Public Schools (HCPS) in the management of 237 schools, including 21 million square feet of roofing. Roof asset data was then analyzed by BTA to identify the best opportunities to extend the life of HCPS roof inventory while containing costs. Because HCPS maintained the database created for them by BTA, annual inspections of the roof inventory were unnecessary until 2010. BTA currently supports HCPS in all its planning and budgeting functions regarding roofing and recently extended the contract to 2013.

POINT OF CONTACT: Clay Ward, Facilities Manager

PHONE/EMAIL: 813-635-1133, clay.ward@sdhc.k12.fl.us



CLIENT/LOCATION: **Navistar, Inc (Melrose, IL)**

PROJECT: Building Assessment

SUMMARY OF PROJECT: BTA provided an assessment of designated areas of the roof system and exterior envelope of the 50,000 SF office area which included an assessment of the roof areas, drains, flashing assemblies, windows and masonry walls. BTA provided a photographic summary report and written recommendations and specifications of the repairs required on the facilities. BTA's reports addressed cost analysis for immediate needs, five (5) year requirements and direction to maximize remaining useful life strategies. BTA worked with Navistar to realize the best plan to reduce the overall cost of ownership of the Melrose Park Campus Facility.

POINT OF CONTACT: James Sheridan, Senior Manufacturing Engineer

PHONE/EMAIL: 317 -322-2867/ James.Sheridan@Navistar.com



CLIENT/LOCATION: **General Motors Corporation** (multiple sites across the US, Canada & Mexico)

PROJECT: Various Roof Services

SUMMARY OF PROJECT: Roof Asset Management services have been provided for General Motors since 1992 with on-going as-needed Total Roof Management services and database management. A 3-year period from January 2007 through December 2009, BTA provided a re-survey of approximately 150 million square feet of General Motors roofing at 72 facilities. BTA has provided ongoing management of the roofing database and associated services of planning, budgeting, construction support and associated database updates.



In May, BTA was awarded a \$27,000 contract with GM to provide Data Collection and Inventory services to the Tonawanda Plant in Buffalo, New York. Included in the project is the assessment of approximately 3 million square feet of roof area on Plants 1, 4 and 5. The assessment effort and resulting analysis ensures that the optimal strategies are being undertaken and that GM is comfortable with its roofing investments at the select plants where future growth and investment are planned. Other sites have included Todelo, OH, Romulus, MI, Spring Hill, TN, Bowling Green, KY, Shreveport, LA and many more across the U.S, Canada and Mexico

POINT OF CONTACT: Bill McNab, Roofing Program Manager

PHONE/EMAIL: 248-672-9231, Bill.mcnab@gm.com



A/E SERVICES FOR MAINT CAPITOL ROOF REPLACEMENT
GSD136423



ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: GSD136423

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Building Technology Associates, Inc

Company



Authorized Signature

01/14/2013

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2013

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Building Technology Associates, Inc

(Company)



(Authorized Signature)

Brian Donnelly, President

(Representative Name, Title)

248.967.4600

(Phone Number)

248.967.4640

(Fax Number)

01/14/2013

(Date)

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Building Technology Associates, Inc

Authorized Signature:  Date: 01/15/2013

Peter Schreiber, VP of Operations

State of MICHIGAN

County of OAKLAND, to-wit:

Taken, subscribed, and sworn to before me this 15th day of January, 2013

My Commission expires 9/23, 2013

AFFIX SEAL HERE

NOTARY PUBLIC 

DIANE C. SMITH
Notary Public - State of Michigan
County of Oakland
My Commission Expires Sept 23, 2013
Acting in Oakland City, MI

Purchasing Affidavit (Revised 07/01/2012)

TOTAL ROOF MANAGEMENT

ROOF RESPONSE, REPAIR & MAINTENANCE

Roof Inspections
Roof Maintenance & PM
Roof Response & Repair

ROOF DESIGN, CONSTRUCTION & REPLACEMENT

Roof Design
• New Roof
• Replacement Roof
Roof Construction
• New Roof
• Replacement Roof

ROOF ASSESSMENT & ANALYSIS

Database Collection
Database Management
Roof Asset Budgeting
Roof Asset Analysis
& Planning

SERVICES PROVIDED

Roof Inspections
Roof Assessment
Roofing Technologies
Guarantee Assurances
Energy Savings
Thermal/Nuclear Imaging
Environmental/Green Roof
Snow Removal
Vegetative Roofing
Roof Safety Plans & Training
Engineer & Architect Alliances
Severe Weather Assessment
(SWAT)

Roof Design & Engineering
Construction Management
Roof Preventative Maintenance
Vendor Sourcing
Roof Database Management
Construction Quality Control
Highly Skilled Support Team
Zone & Code Compliance
Prime Contractor
Roof Security Plans & Training
Envelope & Pavement Alliances
Local, US & Global Service
(24/7/365)

Roof Housekeeping
Budgeting & Capital Planning
Roofing Specifications
Bid Management
Performance Auditing
Sustainability Programs
Solar/PV Roofing
Roof Recycling
Expert Witness
Financing/Bonding
HVAC & Lighting Alliances
Emergency Response & Support
(24/7/365)



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TOTAL ROOF MANAGEMENT TEAM



Contract Holder
Contract GS-21F-0002V

For immediate response email: info@btaww.com

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SUSTAINABLE ROOF SOLUTIONS

BTA is committed to green technologies working to continually provide innovative sustainable solutions. Our energy-efficient approach ensures you are positioned for today's ever-growing energy landscape needs.

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