CONTRACTOR PERFORMANCE AND CERTIFICATION PROGRAMS: DO THEY RESULT IN BETTER ROOFS?

KEVIN KENNEDY and JEFF MANSER
Evans Service Company, Inc.
Elmira, New York, U.S.A.

BILL FISCHER
CFE Inc.
Elmira, New York, U.S.A.

While we are aware of externally generated *certification* programs and comply with them when required, we do not believe they result in better roofs. Let's briefly examine four of them:

State Licensing Programs

Our firm is licensed or registered in 46 of the 50 states. However, the licensing process does nothing more than test the knowledge of general construction and business principles of the person being tested. State licensing programs do not ensure the construction of better roof systems; they merely protect the public by preventing unqualified people from practicing as contractors.

General Motors Program

The General Motors (GM) program is essentially a purchasing pre-qualification process that requires prospective bidders to provide basic information, such as financial viability and safety performance. We applaud building owners such as GM that invest the time to pre-qualify their contractors. However, while pre-qualifying in this manner may weed out prospective bidders who install poor quality roofs, it does not ensure that qualified ones will install better roofs.

ISO 9000 Certification Program

The ISO 9000 Certification Program is virtually nonexistent in the roofing industry. None of our clients have required or even suggested it. Although there is obvious value in creating, documenting, communicating and complying with standard procedures, the ISO certification process is a costly and time-consuming way of doing that.

Factory Mutual Program

Factory Mutual (FM) currently is developing a contractor certification program with input from the National Roofing Contractors Association (NRCA). FM can reduce their insured losses by establishing minimum training and education standards. But establishing requirements *before* a job starts is no guarantee they will have been met when the job is done.

Firm's TQM Performance Program

The balance of our presentation focuses on a program we are confident does result in better roof systems; our company TQM Performance Program. Initiated in 1991, it serves as our "contractor performance program" and gives the principles and processes that enable us to provide our customers with better roof systems. We will share with you some of the quality programs and processes we have that insure we meet our safety, quality and customer satisfaction goals. But before we do that, let's talk about what is meant by the phrase "better roof systems."

What distinguishes a better roof system from a substandard one? As roofing professionals, we know that a better roof system is one that has been designed professionally, utilizes quality materials, and is applied meeting all specifications and details by a fully qualified, professional contractor. If these three elements are in place, the odds are good that it will pass the ultimate test that everyone understands-there are no leaks.

Our concept of a good roof system, however, is much broader than that. Just as a fine restaurant's reputation isn't built entirely on the quality of its food, a contractor's reputation isn't earned entirely by the expert application of a well-designed and leak-free roof. Restaurant owners and roofing contractors set themselves apart from their competition by creating a *total quality experience* for their customers—one that begins at initial contact and is sustained throughout the entire service process. To carry the analogy a bit further, consider a few of the components that make for a fine dining experience.

There is no question that the quality of the food is critical. Without that, chances are the customers won't go back for a second visit. However, many restaurants serve fine food. But not all provide a *total quality experience*, which would include a cheerful voice when you call for reservations, ample parking, attractive decor, a friendly greeting, prompt seating, attentive service during the meal, prompt presentation of the check, and a farewell thank you.

Similarly, providing building owners and their representatives with a better roof system requires that contractors deliver more than leak-free performance. Consider the following list of additional components we believe are essential in providing roofing customers with a *total quality experience*, that is, better roof systems.

- **No surprises**.....before and during the construction process
- **No trainees**.....who lack the skills and experience to do the job right
- **No injuries** .....to anyone, on or off the roof
- **No shortcuts** .....in executing the roof details as specified
- **No substitutions**.....of inferior materials
- **No mess**.....on the roof or on the grounds

- **No disruptions**.....to occupants or operations in occupied buildings
- **No loose ends**.....at the conclusion of the project.
- **No disappearing act**.....if service is required after the job is done

And finally, a user friendly project manager and crew who are fully committed to delivering uncompromising customer satisfaction.

Now that we've provided our definition of a better roof system, let's examine why we feel our TQM Performance Program consistently delivers better roof systems.

We have been involved in contractor performance programs since the early 1980s. The formal TQM Performance Program has contributed immeasurably to improvements in safe work practices, quality workmanship, productivity and customer satisfaction. Sustaining the program requires a major commitment of time and money on the part of the management team with annual costs exceeding $100,000.

We believe the processes and culture we have created as a result of the TQM Performance Program provide a way of defining customer requirements, achieving continuous improvement, eliminating error, and ensuring consistent quality performance. This enables us to install roof systems that meet all quality requirement, the first time. Equally important, these processes have improved our understanding of our customer, and provide us with guidelines for ongoing performance improvements.

In simple terms, this program was established to improve internal performance, raise the level of customer satisfaction and strengthen our position as a leader in the commercial roofing marketplace. A logo and mission statement were created (see Exhibit 1), and three primary goals were established — safety, quality and customer satisfaction. We define total quality as *knowing what needs to be done ... having the tools to do it ... and then doing it right the first time, every time*

Most errors occur when we do not fully understand the requirements before beginning a task or activity. Our training programs stress the need to clarify requirements *before* starting a task.

The word *tools*takes on added meaning within the context of the TQM Performance Program. It means tangible tools of the trade *and* intangible tools, such as the knowledge that comes from both training and experience.

Once customer requirements are understood clearly and the necessary tools are in place, the final ingredient for success is having all associates embrace the concept of *error-free work*This requires a personal commitment on everyone's part to perform activities correctly the first time, every time. Management by prevention is a key TQM concept. Practicing management by prevention enables us to prevent errors from occurring. It shifts emphasis from the traditional "ready-fire-aim mentality" to one where potential errors can be anticipated and therefor prevented. This cultural change is accomplished largely through an increased investment in and commitment to planning and training activities.

Because perfection is not possible, mistakes do occur. When they do, a process called "corrective action" is used to prevent errors from occurring again. It involves identifying an error's cause, developing a corrective action plan and communicating it to all affected associates.

The following are specific examples of programs, processes and accomplishments that have resulted from our TQM Performance Program:

1) Development of a comprehensive **operations manual** outlining all procedures that must be followed to ensure a successful project, from pre-bid activities through completion. Included are safety, and job-related accounting procedures. The manual serves as our standard for meeting customer requirements and establishes the level of quality we seek to achieve. Some examples of the operation manual contents are:
   a) A check list for associates attending pre-bid meetings, which includes taking photographs and roof measurements, noting existing conditions and clarifying specifications (see Exhibit 2)
   b) A project task list used by our project managers defining all tasks that must be completed to effectively manage projects, including who is responsible for what and when each task needs to be completed (see Exhibit 3). The list is arranged in chronological order from submittal of shop drawings and development of a detailed safety and fall-protection plan through mailing our customer satisfaction survey after the job is done.
   c) Instructions on how to complete the procedures dictated by our MIS (management information system), including how to set up job cost and revenue item, and the procedure for creating, updating and transmitting a job tracking report that lets the roofing crew know how they're performing vs. the project estimate and plan (see Exhibit 4).

2) Based on an idea from our field supervisors (submitted through our TQM Idea Program), a full-time safety professional was hired in 1992. We now have a comprehensive **safety and health program** in place that has enabled us to substantially improve our safety practices, equipment and performance. Some examples:
   a) Extensive education and training that includes a comprehensive safety manual, a new-hire orientation that has a company-developed safety video in English and Spanish, annual safety refresher course and weekly job-site safety meetings.
   b) Strong management support and commitment, and an ongoing awareness and enforcement program that includes frequent on-roof, in-shop, and yard inspections and audits.
   c) Investment in state-of-the-art personal protective equipment and fall-protection systems.
   d) Safety committees, made up of 50 percent field associates, who review federal, state and company requirements, evaluate safety ideas and suggestions, and discuss ways to improve safety awareness and performance. As a result of these and many other initiatives, we have been able to reduce our EMR (experience modification rating) from 1.00 to .80. Working safely makes everyone a winner and contributes to our customers satisfaction, our bottom line and, most importantly, the well-being of valued associates.

3) One of the most successful and beneficial aspects of our program is the **TQM Idea Program**, which encourages employees to share their ideas for better ways of doing things. To make responses convenient for field associates, an idea form is printed on the back of time cards. Employees are encouraged to offer any ideas they feel will enhance safety or quality, eliminate errors, increase productivity or improve customer satisfaction. Ideas are reviewed monthly by a QIT (quality improvement team). Each idea is evaluated and actionable ideas are implemented. Each associate submitting an idea is recognized, and awards are given for implemented ideas. An "Idea-of-the-Year" program recognizes the best idea of the year. The winner is selected not by management, but rather by the people who work in the field. We have implemented hundreds of ideas since the program was initiated in 1992. Some examples of those ideas are:
   a) The design and fabrication of a PVC pipe structure providing fast and simple erection of interior protection systems used on deck replacement projects.
   b) The design of a simple ramp mechanism installed on roof carts that allows the removal of roll materials from the carts to avoid dropping them on the roof deck.
   c) A procedure for ordering a small quantity of 4-foot-by-4-foot insulation boards, eliminating the need to cut boards for staggering the insulation joints.
   d) A replacement parts kit for each project and crew. The kit contains an inventory of parts that require frequent replacement, enabling the crew to make immediate repairs and thereby minimize downtime.

4) **Recognition of quality performance** is a cornerstone of the TQM Performance Program. Recognizing the good works of others creates positive feelings for the ones recognized and those doing the recognizing. Formal, public recognition takes at least three forms in our company:
   a) A fellow associate recognition program (FAR) that encourages employees to provide written recognition of fellow employees who perform quality acts.
   b) Monthly internal newsletter articles recognizing individuals and groups, or teams
   c) An annual TQM event banquet or picnic that includes employee's families, celebrates and recognizes past accomplishments, and encourages continued improvement in all areas.

5) A **customer satisfaction program** (CSP) designed to ensure good communication with our customers throughout the construction process. CSP procedures enable us to better understand customer needs, anticipate and avoid potential problems, monitor performance, and measure the level of customer satisfaction after the job is completed. Some key components include:
   a) A pre-job meeting involving the owner and our project manager and on-site team leader to discuss the project plan and schedule, clarify the owner's needs and expectations, and resolve any potential problems.
   b) A bonus program for our roofing team leaders and crew members whose payout is based largely on the level of satisfaction expressed by our customers. This feature provides extra incentive for our people to be responsive to customer needs.
   c) A key account program that identifies our key customers and prospects and assigns responsibility for maintaining an ongoing dialogue with them.
   d) When each project is substantially complete, a one-page questionnaire (see Exhibit 5) is sent to our customers and their representatives asking them to evaluate our performance. Responses come directly to our CEO, and copies are provided to all associates, including the crew who performed the work.

6) Based on TQM ideas from foremen, crew members, and shop and yard personnel, a variety of **roofing equipment** has been **"invented" or modified**, resulting in increased productivity, enhanced safety, increased worker comfort or improved quality. For example: we have developed:
   a) A self-propelled wire brush machine, enabling employees to remove corrosion from steel roof decks quickly, safely and thoroughly.
   b) A PVC pipe sleeve designed to store and protect fire extinguishers from accidental discharge or damage.
   c) Specially designed and fabricated steel safety stands for perimeter protection on large built-up roofing projects. The stands incorporate 8-foot-high posts, with cables stretched between the posts to provide anchorage for safety lanyards. The cable height keeps the lanyard above the roof level to prevent contaminating the lanyard or damaging the newly installed roof system.

7) A vastly expanded **education and training program**. Before 1991, training focused almost exclusively on safety basics and application techniques for various roof systems. Today, each associate participates in at least 40 hours of annual training covering a range of topics, including:
   a) Weekly job-site and shop safety training.
   b) Annual TQM training to ensure each employee understands the basic principles and actions of the quality program. Development of listening, communication and people skills is emphasized
   c) Monthly newsletter articles are used to reinforce the quality message throughout the year.
   d) Regular roofing and sheet metal skills training seminars, conducted by manufacturers and our own field superintendents.
   e) Accounting, computer and MIS skills training for office associates.
   f) Individual-needs courses and seminars sponsored by outside organizations, such as NRCA, Roofing Industry Educational Institute (RIEI), Roof Consultants Institute (RCI) and American Management Association.

8) A **project improvement program** (PIP) where entire project teams meet after projects are completed to critique performance and plan for future elimination of errors. Fault-finding is prohibited. The focus is to identify problems that occurred on the job, identify causes and develop corrective action plans for the future. A number of significant ideas have come out of these meetings, including:
   a) A letter that is sent from the project manager to the building owner before the start of construction telling him about the process in detail. This eliminates surprises, such as dust, noise or week-end work and enables the building owner to alert his employees, tenants or customers in advance.
   b) A detailed procedure requiring a written roofing and sheet metal safety plan for every project (see Exhibit 6). The plan is reviewed by the owner and our entire project team before starting the project.
   c) For projects where built-up roofing is being torn off and replaced by a single-ply membrane system, a protective covering is placed over completed areas to prevent tracking of asphalt onto newly installed membrane.

9) A **partnering program** involving periodic meetings with key suppliers. Ideas are exchanged about ways to improve our relationships and, in so doing, enhance our ability to serve the needs of our common customer — the building owners. Significant improvements have been achieved in the following areas:
   a) Billing and other accounting practices
   b) Shipping and receiving
   c) Product packaging and labeling
   d) Joint marketing programs

10) Development of a variety of **human resources programs** designed to focus efforts, clarify responsibilities and plan for future performance improvements. Some examples:
   a) Written position summaries for all associates, and organization charts for each entity.
   b) Annual written goals for all management, office and field supervisory personnel.
   c) An annual performance appraisal and planning program featuring strong input from those being evaluated.

11) Perhaps the greatest challenge facing roofing contractors today is finding ways of **attracting and retaining good roofing and sheet metal workers**. By its very nature, roofing is a dirty, physically demanding and potentially dangerous occupation that does not naturally attract young people entering the work force. The new recruits we attract must be well prepared to perform the kind of work we do in a safe, competent and professional manner. New hires have enough difficulty adjusting to a new work setting without feeling they are burdens on experienced fellow associates. As a result, and based on a suggestion from a newer field associate, a comprehensive new associate training program has been developed (see Exhibit 7). This week-long, hands-on program is completed by all new hires before reporting to their first field assignments. This program represents a substantial investment of time and money, but the payoff is the increased probability we will retain good, long-term employees. The course combines classroom and on-roof sessions to create awareness and understanding of the following:
   a) Safety rules and regulations
   b) Company policies and benefits programs
   c) Roofing terminology
   d) Basic roof system components
   e) Basic roofing installation skills

The program ends with participants actually installing a small roof system.

A new roof system represents a major investment for building owners. Although a roof system typically represents only 3 percent to 4 percent of total construction dollars, a large or complicated system can cost from $100,000 to millions of dollars. And more than 70 percent of building litigation costs are roofing related. These facts alone make a powerful case for the need to insist on a better roof system, one that is installed:

- Safely
- In complete accordance with the specifications
- With minimal disruption to the building occupants
- In a quality manner by caring craftsmen, ensuring longevity of the completed system

Just as all the components of a quality dining experience must be present to ensure an enjoyable meal, so must all the components of a quality roof system installation to ensure the most important result: a satisfied customer.

As discussed earlier, there are three ingredients that produce better roof systems: professional design, quality materials, and application by an experienced, ethical, and professional contractor.

In our view, a contractor's responsibility goes well beyond that of applying a roof system that doesn't leak. Obviously, a leak-free roof system is a fundamental and absolute requirement. However, through the implementation of our TQM principles and practices we strive to provide owners with a *total quality roofing experience*, one that includes **no surprises, no trainees, no injuries, no shortcuts, no substitutions, no mess, no disruptions, no loose ends, no disappearing act-and a project team fully committed to uncompromising customer satisfaction**.

Anyone who has ever been involved in a total quality program knows it is an evolutionary and never-ending process. Perfection may not be possible. However, we credit our program with providing the tools, processes and philosophy needed to deliver "better roofs" consistently, and in so doing, we delight customers and set ourselves apart from the crowd in today's highly competitive world.

Exhibit 1

Mission Statement

The Evans Service Company, Inc. will build on our position as an industry leader in quality, safety, ethics and education by:

- *Creating long-term relationships with our customers by consistently exceeding their expectations.*
- *Educating our associates to enable them to complete their work in the highest quality manner utilizing proven state-of-the-art technology.*
- *Treating each person with fairness, courtesy and respect in all endeavors.*
- *Providing our associates with professional growth and advancement opportunities.*
- *Strategically expanding our operations while realizing long-term profitability.*

EVANS SERVICE COMPANY INC.

Exhibit 2

PRE-BID INSPECTION CHECKLIST

	Take photos of grounds and general building		Determine complete scope of work
	Make a complete roof plan drawing		Take all roof dimensions & confirm they add up
	Denote all penetrations		Did owner/specifier advise you of asbestos
	Denote all edge conditions & metal dimensions		Will special safety precautions be required
	Confirm that roof dimensions add up		Determine access to building (security, etc.)
	Note heights of each roof area		Has a time frame been set for start/completion
	Take photos of all details/penetrations		What town/city/county is building in
	Make at least one test cut in each roof area		If available, get names of other bidders
	Measure deck thickness		Note available staging and loading areas

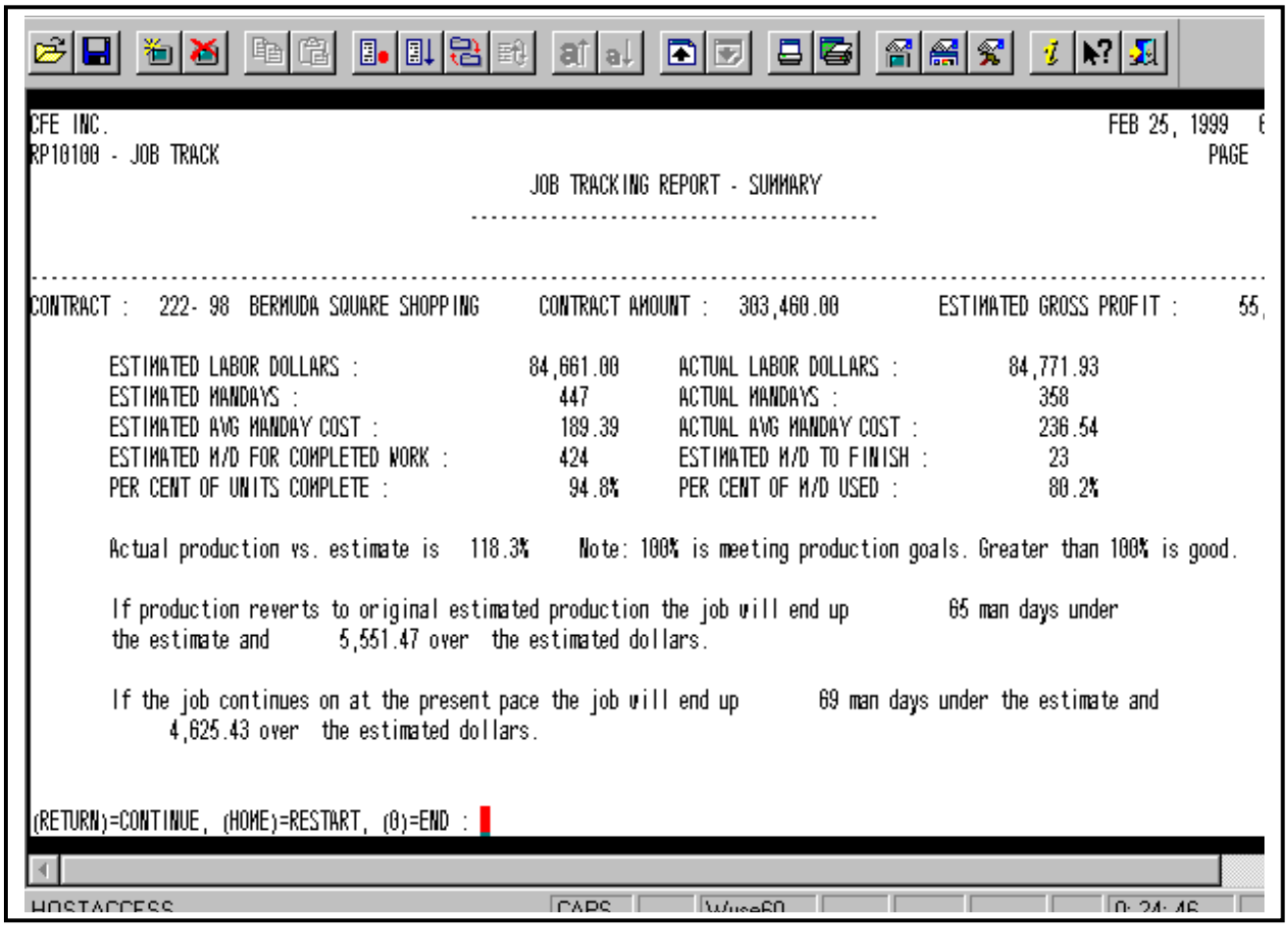
Existing roof/deck configuration:	Detail Drawing A
Detail Drawing B	Detail Drawing C
Detail Drawing D	Detail Drawing E

Exhibit 3

PROJECT TASK SCHEDULE

PROJECT			TEAM LEADER		
ADDRESS			PROJ. MGR.		
JOB #			START DATE		
NAME	DATE	TASK/ITEM TO BE COMPLETED	NAME	DATE	TASK/ITEM TO BE COMPLETED
		HAVE CONTRACT REVIEWED			TEAM LEADER PACKAGE:
		START SHOP DRAWINGS			- PROJ. PERSONNEL FORM
		INSURANCE CERTIFICATE			- ARCH. PLANS AND SPECS
		WORKERS COMP. CERTIFICATE			- LAMINATED SHOP DRAWINGS
		PERFORMANCE/PAY BONDS			- COPIES OF SUBMITTALS
		TAX EXEMPT CERTIFICATE			- MFG. SPECIFICATION
		SET UP IN BIDTEK			- PRODUCTION EXPECTATIONS
		ORDER ROOFING MAT			- JOB SCHEDULE
		ORDER INSULATION			- COPIES OF PURCHASE ORDERS
		ORDER 4 X 4 INSULATION			- DAILY REPORTS/LOST TIME RPT
		ORDER METAL			- DELIVERY SCHEDULE
		ORDER ACCESSORIES			- LOAD LIST
		ORDER LULL			- SPECIAL INFO ABOUT JOB
		ORDER DUMPSTER			- MSDS SHEETS
		ORDER STORAGE TRAILER			- PERMIT/LICENSE INFO
		ORDER PORT-O-LET			- SAFETY INSPECTION FORM
		ORDER GENERATOR			- LABOR LAW POSTERS
		WRITE PO FOR BONDS			- LAMINATED PROJ PERS FORM
		WRITE PO FOR WARRANTY			- LOADING SCHEDULE
		WRITE PO FOR SUBS			- FALL PROTECTION PLAN
		SET UP ACCT W/ LOCAL SUPPLY			INVOICE JOB
		BLDG. PERMIT/CONST. LICENSE			SCHEDULE ADD. DELIVERIES
		SCHEDULE/CONTRACT SUBS			SAFETY INSPECTIONS
		SEND IN NOTICE OF AWARD			QUALITY INSPECTIONS
		SEND SUBMITTALS			SEND NOTICE OF COMPLETION
		COMPLETE LOAD LIST			REDUCE RETAINAGE
		SEND MSDS SHEETS TO OWNER			SEND WARRANTY
		SEND PRE-JOB LETTER			SEND CUS. SATIS. SURVEY
		RELEASE PAINT ON PHENOLIC PROJ.			

Exhibit 4



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CFE INC.                                                                    FEB 25, 1999   6
RP10100 - JOB TRACK                                                              PAGE
                                    JOB TRACKING REPORT - SUMMARY
                                    -----------------------------

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CONTRACT :   222- 98  BERMUDA SQUARE SHOPPING     CONTRACT AMOUNT :   303,460.00        ESTIMATED GROSS PROFIT :     55,

      ESTIMATED LABOR DOLLARS :              84,661.00     ACTUAL LABOR DOLLARS :          84,771.93
      ESTIMATED MANDAYS :                      447         ACTUAL MANDAYS :                  358
      ESTIMATED AVG MANDAY COST :              189.39      ACTUAL AVG MANDAY COST :          236.54
      ESTIMATED M/D FOR COMPLETED WORK :       424         ESTIMATED M/D TO FINISH :          23
      PER CENT OF UNITS COMPLETE :              94.8%      PER CENT OF M/D USED :             80.2%

      Actual production vs. estimate is   118.3%    Note: 100% is meeting production goals. Greater than 100% is good.

      If production reverts to original estimated production the job will end up        65 man days under
      the estimate and       5,551.47 over  the estimated dollars.

      If the job continues on at the present pace the job will end up       69 man days under the estimate and
           4,625.43 over  the estimated dollars.


(RETURN)=CONTINUE, (HOME)=RESTART, (0)=END :
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Exhibit 5

Roofing Contractor Project Evaluation Form

Project FoodMax Contractor CEE, Inc.

City & State Hermitage, TN Job Number 209-98

A. Using the following scale, please circle the number which best describes your overall level of satisfaction with our project team's performance on this project.

5 Exceeded my requirements.
4 Consistently met my requirements.
3 Met most of my requirements.
2 Failed to meet some of my requirements.
1 Failed to meet most of my requirements.

JOB SITE TEAM		OFF-SITE TEAM	
Foreman/Crew	Rating	Project Management	Rating
Watertight project	5 (4) 3 2 1	Timeliness of information	(5) 4 3 2 1
Understanding your needs	(5) 4 3 2 1	Understanding your needs	(5) 4 3 2 1
Responsiveness to problems	(5) 4 3 2 1	Responsiveness to problems	(5) 4 3 2 1
Quality of workmanship	5 (4) 3 2 1	Availability when needed	(5) 4 3 2 1
Meeting schedule	5 (4) 3 2 1	Meeting schedule	(5) 4 3 2 1
Safety practices	(5) 4 3 2 1	Administrative paperwork	(5) 4 3 2 1
Housekeeping	5 (4) 3 2 1	Technical knowledge	(5) 4 3 2 1
Cooperation	(5) 4 3 2 1	Cooperation	(5) 4 3 2 1
Professionalism	(5) 4 3 2 1	Professionalism	(5) 4 3 2 1
Personal conduct	(5) 4 3 2 1	Courtesy	(5) 4 3 2 1
Overall Rating	(5) 4 3 2 1	Overall Rating	(5) 4 3 2 1

Comments: _____

B. Please list the things you considered most critical on this project, and circle the number which best describes how well we achieved them:

Critical Performance Factors	Rating
1. OPENING FOODMAX ROOF / INTERIOR INVOLVEMENT	(5) 4 3 2 1
2. WORKING W/ TENANTS	(5) 4 3 2 1
3. PAPERWORK ADMIN DUE TO COMPLEXITY	(5) 4 3 2 1

C. Would you use us again? (✓) Definitely ( ) Probably ( ) Possibly ( ) No

D. May we share your comments with prospective clients? (✓) Yes ( ) No

Ray Dan Stuckly — Signature
BWSC/FPI — Firm
1/9/99 — Date

Exhibit 6

FALL PROTECTION PLAN

PROJECT FORM

PROJECT NAME:	IBM	JOB NUMBER	225-99
LOCATION:	Elmira, NY		
START DATE:	1/27/99		
SUPERINTENDENT:	Mark McKinney	PROJECT MNGR..:	Paul Mitchell
ROOF SYSTEM	Sarnafil G410&327	ROOF SLOPE:	0
ELEVATION:	Approx. 26 ft.		

FALL PROTECTION OPTIONS

CONVENTIONAL:
(check appropriate system(s))

GUARDRAIL SYSTEM
_____SAFETY NET SYSTEM
__X__PERSONAL FALL ARREST SYSTEM

OR/AND

ALTERNATIVE:
(check appropriate system(s))

WARNING LINE SYSTEM
_____CONTROLLED ACCESS ZONE (CAZ)
_____SAFETY MONITORING SYSTEM

DESCRIPTION OF FALL PROTECTION SYSTEM: Warning line system a minimum of 10' from the roof edge. Top line to be safety line flagged at 6' intervals. Bottom line to be steel cable for associates to attach lanyards to when outside safety and capable of withstanding 200 lbs. Stands to be attached to steel deck at maximum 50' interval. Roof access location to have warning line flagging to main warning line setup.

SIGNATURES (all involved):

_____ _____ _____

_____ _____ _____

_____ _____ _____

Exhibit 7

PRE-JOB TRAINING OUTLINE *Hard Hats-Safety Glasses worn all day, every day	notes
DAY I	
Go through all of handbook and safety video. Set up ladder and discuss all personal protection systems. Set up use and take down hand hoist.	
DAY II	
Set up the generator. Set up safety system on module. Tear off old roof.	
DAY III	
Inspect safety; Make any necessary repairs. Screw gun training.	
Cut and lay ISO, letting the associates do all the measuring and cutting (allow minimal assistance from trainer).	
Lay mechanically attached, heat welded product and stress proper screw placement, seam width, proper cleaning and typical one foot on center in seams and at walls and curbs. Demonstrate use of robot welder.	
Night Tie-in: explain why we do this.	Use chart
DAY IV	
Inspect safety; Make any necessary repairs. Hazardous materials review.	
Lay EPDM mechanically attached, one foot on center, with screws. Be sure to have a minimum of 5 seams. Teach them 7" minimum when screws are in the seams and 4" minimum where screws are not required. Stress that we use 7" out onto the roof with any added flashing on ***all*** systems.	
Flash a curb with EPDM	
DAY V	
Flash walls, pipes, and curb with Carlisle. Instill the proper cleaning and glueing techniques and stress proper glue dryness.	
Practice corner patching, pig-ears (try to complete the module).	
Tear down safety, ladder and clean up.	
Speak individually with each associate and present certificate, if earned. Explain strengths and weaknesses to each associate. Congratulate them and give assignment if earned and if known.	