

**OIG MODIFIED APPENDIX**  
**TO THE**  
**FINAL AUDIT REPORT**

November 13, 2003

**Performing Arts Center Construction Manager's  
Quality Control Program**

**OIG Modified Appendix**

(Due to the voluminous nature of the responses,  
only the responses themselves and the pertinent attachments are  
included in this modified Appendix. Please contact the **OIG**  
at **305-375-1946** or the Clerk of the Board at **305-375-5126**  
to obtain a complete copy).

- A. Advance notification letter re: draft report to Performing Arts Center Builder (PACB). PACB's response including: cover letter, PACB's response to OIG (part of which is incorporated directly into the final report where specific to the enumerated audit findings) the Executive Summary of its Revised Quality Control Program, PACB's Exhibit A, and PACB's Exhibit B.

**[As modified, not including PACB's exhibits A and B.]**

- B. Advance notification letter re: draft report to Performing Arts Center Management Office (PACMO). PACMO's response to the OIG including: cover letter, PACMO's Table of Contents identifying a list of attachments, the attachments, notably Cesar Pelli & Associates' response to the OIG's draft report dated September 30, 2003, and a variety of owner issued deficiency notices.

**[As modified not including the attachments identified in the Table of Contents, except for the September 30, 2003 letter from Cesar Pelli and Associates, which responds to the OIG's draft report.]**

- C. Supplemental Response submitted by PACMO on behalf of Cesar Pelli & Associates re: its review of the PACB's Revised Quality Control Program, with attachments.

**[no changes - complete]**



OFFICE OF THE  
INSPECTOR GENERAL  
MIAMI-DADE COUNTY

CHRISTOPHER R. MAZZELLA  
INSPECTOR GENERAL

ALAN SOLOWITZ  
DEPUTY INSPECTOR GENERAL

PATRA LIU  
ASSISTANT INSPECTOR GENERAL  
LEGAL COUNSEL

September 4, 2003

**FILE COPY**

Mr. Luis Simon  
Project Executive  
Performing Arts Center Builders  
240 NE 13<sup>th</sup> Street  
Miami, Florida 33132

Dear Mr. Simon:

Attached please find a copy of the Office of the Inspector General's (OIG) Draft Audit Report regarding the Construction Manager Quality Control Program for the construction of the Performing Arts Center of Greater Miami. A copy of this draft is also being provided to the Executive Director for the Performing Arts Center Management Office,

Please be advised that you may provide a written response to these findings, which will be included with our final report. This response must be received by September 18, 2003 should you elect to respond.

If you wish, you may provide your response by fax to (305) 579-2656.

Yours truly,

Christopher Mazzella  
Inspector General

Acknowledgment of Receipt or Proof of Service

9-4-03  
Date

cc: Mr. Neil Hall, President/CEO, The Architects Hall Designers, Inc.



## Performing Arts Center Builders

240 N.E. 13<sup>th</sup> Street, Miami, Florida 33132

Telephone: (305) 576-5595

Facsimile: (305) 576-4886

October 10, 2003

SENT VIA FAX 305-579-2656

Mr. Chris Mizzella  
Inspector General  
Office of the Inspector General  
Miami-Dade County  
19 West Flagler Street, Suite 220  
Miami, FL 33130

Re: *Draft Audit Report - Quality Control Program*  
Performing Arts Center of Great Miami

Dear Mr. Mizzell,

The Performing Arts Center Builders (PACB) is pleased to provide the attached Response to the draft audit report of the Office of Inspector General (OIG), dated September 4, 2003, which raised various issues about the in-place procedures for documenting the Construction Manager Quality Control Program. *We believe that it is critically important to note that the draft report did not address the actual quality of the work and that as the Response and recent inspections of the Project demonstrate, the level of quality of the work is high and the commitment of PACB and its subcontractor's to the delivery of quality work is beyond question.*

The draft audit report did note issues with the process of reporting, particularly the handling of paperwork. PACB has acted on those concerns and has included in the Response a summary of an Enhanced Quality Control Plan for the Project that addresses all of the OIG's documentation concerns and implements new procedures to enhance the Quality Control organization and resources.

PACB appreciates the time and effort that went into the OIG Report. Nothing is more important to PACB and its subcontractors than the finished quality of the project. There never has been and never will be any compromise to that objective. *We look forward to the opportunity to address what we believe to be the biggest threat to the success of this important project—the inability to comply with contractual time frames to resolve the serious defects in the design documents for the project.*

Given the importance of quality to the project, and the significant public scrutiny this topic has received, it is helpful to offer some observations and correct some misimpressions that have developed.

1. *The OIG report is about process, not product – the paperwork and administration side of things. The OIG did not evaluate the quality of the work itself.*
2. *The quality of the work is very high and will not be compromised. Over the past two years, nearly \$80 million of work has been completed and over 3 million man-hours have been expended getting this work done. Over 99.8% of the work in place meets or exceeds the quality expectations of the project. This minor amount of "out of tolerance" work has not and never did compromise structural integrity or the acoustical performance of the project. In the end, the project will be 100 percent in accordance with the quality expectations.*

Mr. Chris Mizzella  
October 10, 2003  
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3. *The procedure issues raised by the OIG have neither delayed construction nor added cost to the County.*
4. *Deficiencies in the design have been and remain the biggest threat to the timing and cost of the completion of the Performing Arts Center. Significant improvements in the Quality of the Design Documents is critical. Time and again the design documents provided have failed to meet the quality standard that this project deserves.*

In summary, there are no unaddressed quality issues with the work in place. Issues raised in the OIG report with quality documentation are addressed in the Revised Quality Control Plan. The entire Revised Quality Control program in draft form will be reviewed with the County in the upcoming week; many of the enhancements are now in place and working. We remain committed and dedicated to delivering the highest quality project to the tax payers and County.

Sincerely,

PERFORMING ARTS CENTER BUILDERS



James A. Gray  
Project Principal

- cc:
- Patra Liu, Assistant Inspector General, Legal Counsel, OIG
  - Steve Pollack, Special Agent, OIG
  - Neal Hall, The Architects Hall Designers, Inc.

*Performing Arts Center of Greater Miami*  
**PACB RESPONSE TO OIG**  
**REPORT ON QUALITY MANAGEMENT**

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**INTRODUCTION AND  
SUMMARY**

The Performing Arts Center Builders (PACB) received the draft audit report of the Office of Inspector General (OIG) on September 5, 2003. The Draft Report assesses the quality management program for the Performing Arts Center of Greater Miami with specific reference to those quality management responsibilities assigned to PACB under its contract with Miami-Dade County. The Report makes numerous observations and proffers 16 findings, all of which are thoroughly discussed in this Response.

PACB appreciates the recommendations contained in the OIG Report. Nothing is more important to PACB and its subcontractors than the finished quality of the project. Given the importance of quality to the project, and the significant public scrutiny this topic has received, it is helpful to first offer some general observations and correct some misimpressions that have developed.

- 1. The OIG Report is about process, not product.** The OIG Report makes clear it evaluates the quality management process – the paperwork and administration side of things. The OIG did not evaluate the quality of the work itself. Both are important and PACB is completely committed to establishing and maintaining a comprehensive quality management process. But in the end, the quality of the work itself is what matters.
  
- 2. The quality of work in place is very high and will not be compromised.** Over the past two years, nearly \$80 million in work has been completed and over three million man-hours have been expended in getting this work done. As noted in the OIG report, through May 2003 only eleven deficiency notices were issued for the project. Many of these were initiated by PACB or its subcontractors and all have been or are in process of being corrected in accordance with procedures approved by the architect. The same is true for any other deficiencies that have or will arise in the future. *None of the deficiencies, once corrected, affect the acoustical performance of the project and none have questioned the structural integrity of the buildings.* PACB would not permit this to happen,

nor would the architect and nor would the County.

3. **Effective quality management is a team effort.** On a major project like the Performing Arts Center, everyone shares responsibility for assuring quality. The various contracts among PACB, its subcontractors, the architect and the Owner make this clear. In general, subcontractors are responsible for assuring the work put in place conforms to the contract documents. PACB is responsible for monitoring subcontractor compliance with their respective quality control requirements, administering overall quality control processes and overseeing subcontractor performance of work in the field. The specific obligations placed upon PACB are set forth in the contract documents and PACB's quality control plan to fulfill those requirements is likewise incorporated into the contract. The Owner is responsible for answering questions when design or quality issues arise and to provide PACB with current contract documents that accurately and completely depict what is to be built and updating such information as needed. The Owner is also responsible, by contract, for performing certain Quality Assurance functions such as the materials testing and for conducting threshold inspections to certify structural compliance with the contract documents. For quality to be effectively administered, all parts need to come together cooperatively.
4. **PACB met or exceeded contractual requirements for quality management.** From the beginning of the project, PACB consistently met or exceeded contractual requirements for quality management. Allegations to the contrary are wrong. PACB has provided more staff, spent more money and secured greater resources from subcontractors than required by the contract. Over twenty people are dedicated to quality management from PACB and its subcontractors. More than 50 quality control related meetings have been held. PACB staff has traveled throughout the country and even the world to help assure quality is maintained on the project. It is doubtful that any single project ever executed in Miami-Dade County has had greater resources dedicated to quality.

5. **PACB has expanded and increased its commitment to quality.** Despite the exceptional level of quality resources committed to the project, performance of quality management and documentation functions fell short of PACB's expectations in some respects. Specifically, some of the recordkeeping requirements were not satisfactorily met; there were instances of subcontractors falling short of expectations. PACB proactively undertook a comprehensive revision to its quality control program that applies even greater resources, increases field inspection and oversight activity, upgrades the capabilities of quality staff, significantly improves reporting and establishes a quality team that will provide oversight and guidance to the entire management process. *The revised plan addresses each of the relevant findings and recommendations contained in the OIG Report.* The key elements of the revised plan are already being implemented.
6. **Quality issues have neither delayed construction nor added cost to the County.** There have been insinuations that the work required to correct errors has either delayed the project or added cost to the County. Neither is true. Remedial work has been performed without delaying critical work and any cost of correction has been, and will continue to be, borne by the party responsible for the error.
7. **Significant improvement in the quality of the design documents is critical.** It is difficult, if not impossible, to build a high quality world class facility without high quality design documents. Time and again the design documents provided by the Owner have failed to meet this standard. Time and again solutions to these design problems have come far too slowly. Over 5,000 corrections and clarifications to the drawings have been required to properly execute construction activities. Comprehensive, complete and correct plans must be issued. Commitment of the Owner to immediate improvement in the design documents should be made a high priority.

The remainder of this Response specifically addresses the

findings and recommendations contained in the OIG Report. In some cases, the OIG Report is erroneous and those errors are pointed out. In other cases the OIG Report raises valid concerns and in each such instance, the revised Quality Plan described above addresses the concern raised.

The Performing Arts Center will be completed in accordance with the contract and consistent with the high quality expectations it sets forth. There never has been and never will be any compromise to that objective.

**Finding No. 1: QCORG and subcontractor organizational charts and related documentation do not include the required staffing information.**

*Response*

The organizational chart for the existing Quality Control Organization (QCORG) is appropriate. Nonetheless, the CM has included a revised organizational chart depicting the Revised QCORG that provides an expanded organizational chart that further addresses any concerns of the OIG.

The current staff of the QCORG is qualified and meets all of the requirements of Section 01440. Furthermore, we are adding a Sr. QC Manager to the organization, Robert Laramie, to bridge and provide leadership over all of the QC functions, which interrelate with the Architect's and Owner's responsibilities. The revised quality control program depicts Mr. Laramie's role and resume, along with the rest of the QC personnel. The current QC Program Administrator is a Certified General Contractor in the State of Florida with over 20 years of experience in construction management. The Document Control & Recordkeeping Administrator is an engineer with over 30 years of experience in construction, including quality assurance and quality control, and is also a Certified Uniform Building Code Inspector. Each of the Field Technicians has many years of experience. Similarly, the designated Quality Control Representatives for the subcontractors are experienced craftsmen, who more than meet the requirements of Section 01440. The specification section 1440 refers to NICET Level II or equivalent.. This reference appears to be a mistake and is not



relevant since these requirements deal solely with Quality Assurance personnel involved in asphalt, concrete and soils testing on the project, an Owner responsibility, not QCORG staff.

In summary, the prior program met the organizational requirements of Section 01440. To provide further assurance of appropriate quality control, the Construction Manager has provided an additional level of detail in the Revised QCORG that should resolve any further questions that the OIG may have.

**Finding No. 2: The QCORG has not fulfilled its role of implementing and monitoring the QC Program.**

Response

The subcontractors' self-inspections took place but the transmission of the documentation of these inspections has not kept pace. The documentation is available for review. The suggestion of the OIG that "more than sixteen (16) months lapsed before any subcontractors documented inspections of their work" is incorrect. Documentation of subcontractors' self-inspections began with the start of foundations on January 29, 2002, and has proceeded since then. By way of example, the Concrete Placement Inspection Card process was implemented that required all subcontractors to sign-off on completion of their work. An example of one of the hundreds of such Concrete Placement Inspection Cards is included here as Exhibit A. Various other inspection performances have been utilized on the project. The construction manager's Revised QC Program provides an improved method of collecting, summarizing and reporting on daily inspections that will expedite any oversight of the process.

**Finding No. 3: The QCORG has not provided adequate support to the subcontractors to implement their QC Program as part of the Construction Manager QC Program.**

Response

The analysis of the OIG, overlooked records of over 50 quality control related meetings such as those for prefabrication, mock-ups and pre-installation. A matrix indicating those meetings is included here as Exhibit B. Most of these meetings included representatives of the Owner, the Architect/Engineer and its various consultants. In addition, numerous informal meetings and discussions were held directly between the QCORG and the subcontractors. If appropriate consideration is given to these additional meetings, the Construction Manager is confident that the concerns of the OIG will be eliminated.

**Finding No. 4: There is an insufficient number of qualified QCORG technicians to monitor the work activity at the project.**

*Response*

The construction manager agrees with the OIG that given the additional burdens placed upon the construction manager and subcontractors by the defective and deficient design of the project that supplementing the existing QCORG staff may be appropriate. The original staffing complied in all regards with Section 01440 and ought to be adequate. The construction manager's Revised QCORG takes into consideration some of the current realities of the project by adding additional staff, which should provide additional support in addressing field issues that arise from the inadequacies in the design documents.

**Finding No. 5: QCORG funding will lapse before project completion date.**

*Response*

The OIG's concern appears to be based on the misperception that the agreement between the construction manager and the The Architects Hall Designers, Inc. (TAHD) is a lump sum agreement. The agreement is not a lump sum basis. It was, however, based on an estimated cost of services anticipated in the original schedule. Since design deficiencies and the inability to have those deficiencies resolved in a timely manner has resulted in a significant increase in the construction schedule, the construction manager will be required to adjust

the agreement to provide additional funding as necessary to fulfill all required QC functions. The construction manager has already notified the Owner of liability for any such costs.

**Finding No. 6: Incomplete QCORG files of PACB Operation's inspection notifications indicate that the QCORG may not have been aware of some subcontractor work activities that it would have wanted to inspect but for the lack of notices may not have inspected.**

*Response*

A review of the process confirmed that the Notification for Inspection / Testing had properly been provided to the QCORG. QC technicians pick up their copy of the inspections each morning from the Operations field office. A copy of the Notice for Inspection / Testing provided to them is maintained in the construction manager's Operations field office. That file is complete. Missing notifications in the separate QC file may result from the technicians handling them during the day when working in the field making the inspections. The construction manager has confirmed with the QC staff that no inspections have been missed as a result of any perceived lack of notification.

**Finding No. 7: Premature inspection notifications leads to inefficient use of Threshold Inspectors.**

*Response*

The construction manager agrees that clear communication is absolutely critical to the success of any quality control program. In certain incidences there appears to have been premature notification by subcontractors. There also appear to have been situations where threshold inspections have occurred before notice was given by the subcontractors, again causing inefficiencies. The construction manager believes that its Revised QCORG provides for an improved flow of communication that should address this issue.

**Finding No. 8: Subcontractor requests for inspections fail to identify whether requested inspection is due to previously**

failed inspections.

Response

PACB acknowledges the observation of the OIG and although not required by the specifications, the construction manager agrees that this is a good suggestion and will require that such information be included in future notices.

**Finding No. 9: PACB has not provided the Owner and A/E with QCORG inspection documentation in accordance with the QC Program DIR reporting format, completeness and frequency requirements.**

Response

The construction manager concurs with the OIG finding and has addressed the formatting, completeness and frequency in its Revised QCORG. The revised reporting program exceeds the requirements of Section 01440 consistent with the construction manager's objective of delivering a world class facility for the citizens of South Florida.

**Finding No. 10: All subcontractor self-inspections were undocumented prior to February 19, 2003.**

Response

As the construction manager noted in response to Finding No. 2 above, the OIG overlooked a large set of documentation and data reflecting appropriate subcontractors' self-inspections. Again, however, the Revised QCORG provides a more user-friendly set of documentation that should avoid any future issues.

**Finding No. 11: Subcontractor self-inspection reporting does not contain the required information called for in Article 1.08 Documentation.**

Response

The construction manager concurs with the OIG finding and has

Response

distribution of all quality control reporting to the appropriate  
right time  
COLLECTIVE RESPONSIBILITY - The A/E or the Owner is at a  
maintain constant communication with the  
subcontractors. Issues related to quality and non-conforming  
work are discussed regularly with the A/E. The are also  
inspections by the local building department who provides  
oversight of threshold inspected work as well as performing  
plumbing, mechanical, electrical, fire and building inspections.

**Finding No. 13: Subcontractor self-inspection reports are not signed by the QC Program Administrator.**

Response

The construction manager agrees that the subcontractor daily reports should be received by the QCORG and signed by the QC Program Administrator. This issue is being addressed in the

**Finding No. 14:** DIRs prepared by the QCORG Technicians and the subcontractors' designated Quality Control representatives do not contain the required remedial or corrective action proposed or taken.

*Response*

The construction manager acknowledges that the inspection reports have not consistently documented the required remedial or corrective action proposed or taken. As such, the Revised QCORG includes appropriate checks and balances to ensure that all such information is appropriately documented. To be clear, all remedial and corrective action has been or is being reviewed and inspected by all appropriate persons, including the Owners Materials Testing Laboratory, the Threshold Inspector or Regulatory Inspector. Nevertheless, the construction manager agrees that it is important that all documentation be complete.

**Finding No. 15:** Deviation from the approved QC Program by the QCORG Technicians may have resulted in a higher failure rate when the Threshold Inspector conducted the same inspection.

*Response*

A review of the detail behind the OIG's statistics found errors that skew the results. Some examples that would skew the results are as follows.

- Comparisons between what was inspected by the QCORG Technicians and the Threshold Inspectors do not correlate.
- Some QCORG inspections noted that the Threshold Inspector could be notified, but that remedial work was required prior to the actual inspection.
- Many inspection reports both from the PACB QCORG and the Threshold Inspectors were also noted as preliminary, clearly indicating that whoever was inspecting the work was doing so ahead of the work being complete.

As a result, the data reviewed by the OIG are incomplete and skewed.

### Report on Quality Management

that skew the results. An example is that in the steel beam analysis the number of shear studs were improperly represented

Included in the OIG report was a status report of the 11 eleven deficiency notices that have been issued by the A/E. PACB does not agree with the information provide in Table 3. PACB has made corrections to the table according to our records. Those corrections are hi-lighted in the table below.

NOTICE OF DEFICIENCY NUMBER	NOTICE OF DEFICIENCY DATE	NOTICE OF DEFICIENCY ISSUE	PACB'S RESPONSE DATE <sup>(1)</sup>	DATE NOTICE OF DEFICIENCY RESOLVED
1	10/17/02	Incorrect layout of the BOH Orchestra Pit Sides	11/05/02	04/14/03
2	11/04/02	CMU back-up at Stone mock-up	11/13/02	<del>11/15/02</del>
3	11/21/02	Deficiency at BOH Elevator # 11 Shearwall	12/18/02	04/14/03
4	01/22/03	CH Shearwall #1 exceeding Contract tolerances	02/05/03	04/14/03
5	03/04/03	BOH – Slab depression for Room B3056	07/02/03	—
6	03/18/03	BOH – Stair #3	<del>05/16/03</del>	—
7	03/31/03	Ramp B4026	<del>04/08/03</del>	—
8	04/03/03	Bearing plates and anchor bolts	<del>04/16/03</del>	<del>05/09/03</del>
9	04/09/03	BOH – Food Dock Lift Pit	05/08/03	05/09/03
10	04/09/03	CH Rear stage entry pipe columns	<del>05/02/03</del> (verbal)	<del>05/02/03</del>
11	05/08/03	Unacceptable exposed CMU in Room 1109	<del>05/23/03</del>	<del>N/A (5)</del>

<sup>(1)</sup> This is either the only or the first documented response from PACB to a Notice of Deficiency

~~An approval was not required since the non-conforming work was removed and replaced in its entirety~~



- PACB responded to CFC's finding that the [redacted] and not a construction deficiency. PACB completed the corrective work and has

CONCLUSION

PACB appreciates the work of the OIG and its contributions to its improved quality control process for the Performing Arts

# Performing Arts Center of Greater Miami Revised Quality Control Program

## Section One

### EXECUTIVE SUMMARY

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#### OVERVIEW

Assuring the Performing Arts Center of Greater Miami is completed in accordance with the highest quality aspirations possible is the most important objective of all stakeholders and it is an objective all stakeholders hold in common. To that end Performing Arts Center Builders (PACB) has developed and proposes a revised and reorganized Quality Control Program, described more fully below. The revised Quality Management Process:

1. Meets or exceeds all Contract requirements.
2. Provides more, highly qualified people.
3. Stresses good communication and proactive solutions.
4. Provides measures to assure subcontractor cooperation and compliance.
5. Establishes a Quality Team to assure the plan meets its objectives and makes mid-course corrections if needed.

PACB accepts primary responsibility for implementing and assuring quality performance in construction but truly effective quality management is a philosophy that demands a collaborative approach among the Performing Arts Center Management Office (PACMO), Cesar Pelli & Associates, Inc. (CP&A), Performing Arts Center Builders (PACB) and all of their respective subconsultants and subcontractors.

#### OBJECTIVES

1. The relevant contract requirements are captured in Specification Section 01440. These specifications outline basic requirements but give the CM considerable latitude in developing the details of the Quality Control Program.
2. The principal objectives of the revised Quality Control Program are to:
  - a. Create a high level oversight of the entire quality process by establishing a high-level, collaborative Quality Team.

- b. Provide key resources on PACB's quality staff to focus on communication among team members.
- c. Assure improved quality documentation to comply with the contract and provide PACB and the Quality Team with sufficient and timely information to evaluate compliance with the Quality Control Program.
- d. Assure that quality technicians spend most of their time in the field to oversee work in place.

**OVERSIGHT – THE  
QUALITY TEAM**

Recognizing that the desire and commitment to create a quality project is shared by the entire organization of PACMO, CPA and PACB, we will create a Quality Team that will provide oversight and guidance to the entire quality management process. The team will be comprised of the following people:

PACMO	-	Willie Peña
PACMO	-	Ola Aluko
CP&A	-	Randy Volenec
PACB OPS	-	Ron Murtha
PACB QC	-	Bob Laramie
TAHD	-	Neil Hall
PACT	-	TBD

The Quality Team will meet as frequently as it deems necessary. It will set up systems to assure compliance with the Quality Control Program. It will intervene where appropriate to resolve specific quality issues.

**QUALITY FUNCTIONS  
AND  
RESPONSIBILITIES**

The distribution of overall project quality responsibilities is depicted in the organization charts included in Section Two. These charts respond to the requirements of Specification Section 01440 but importantly, add further resources not contemplated in the specifications and not previously present on the project. It is important to articulate the respective responsibilities of the stakeholders with respect to quality and how the parties communicate and interface with each other.

### **PACB Responsibilities**

PACB bears primary responsibility for assuring construction quality on the project. It achieves this in three primary ways:

1. Through directly employed quality management staff.
2. Through the separate quality organization in accordance with Specification Section 01440 by The Architects Hall Designers, Inc. (TAHD)
3. Through quality control staff required from and provided by subcontractors and material vendors.

The division of responsibilities among these three elements is described below.

### ***PACB's Staff***

The specific functions and roles performed by PACB's direct quality staff are:

1. Direct all subcontractor efforts including their QC responsibilities. TAHD has been engaged to assist PACB in this effort.
2. Within the Document Control group and Operations, manage all A/E Construction Documents, including design changes, RFI's and deficiencies generated by the A/E and Threshold Inspectors. A Document Index & Distribution Matrix is included in Section Five which fully describes location and responsibilities of project documentation.
3. Coordinate and schedule all project activities including quality activities such as:
  - a. Shop Drawing submittals/logs
  - b. Material testing
  - c. Threshold Inspection

- d. Pre-installation conferences
  - e. Regulatory inspections
4. Oversee and manage performance of the separate quality organization (TAHD).
  5. Manage communication and reporting within the entire project team on all quality issues to assure everyone is aligned on quality objectives, issues and responsibilities.

Under the revised plan, PACB is adding a key resource, Bob Laramie, to lead PACB's quality management process. Adding this resource will achieve three primary benefits. First, Bob's leadership will greatly improve communication, management and reporting on all QA/QC activities. Second, PACB will much more closely assist TAHD in performance of its obligations (described below). Third, Bob will be a principal liaison with CP&A to assure that QA/QC efforts are more proactively aimed at the most sensitive elements of the project.

*Separate Quality Organization (TAHD)*

TAHD has been delegated responsibility, under 01440, to:

1. Develop this detailed Quality Control Program, consistent with contract requirements.
2. Maintain knowledge of and status of construction documents including changes, RFI's and submittals.
3. Work with and establish liaison with subcontractors, clarifying their QC role and communication processes with TAHD
4. Participate in QC portion of subcontractor pre-installation conferences.
5. Run additional periodic subcontractor meetings which focus on quality, rewarding excellent performance and establishing improved procedures to avoid re-experiencing deficiencies
6. Perform periodic inspections on subcontractors' work.

7. Visit major fabrication plants (those fabricating/assembling specific products for the project) to verify satisfactory procedures and quality control processes (regular plant quality control visits are not included)
8. Receive and document quality reports which are housed in Document Control, Operations or Q.C.:
  - a. Subcontractor DIR/Logs
  - b. Quality reports from vendors
  - c. Quality reports from vendors for Owner-Directed Purchases.
  - d. Special Inspection (Threshold) reports
  - e. Material testing reports
  - f. DIR's generated by TAHD Field Technicians
  - g. Minutes of quality aspects of pre-installation and periodic quality meetings
9. Prepare Monthly QC Summary Reports which analyze and assemble the prior month's activities enabling appropriate levels of senior management to be well informed on:
  - a. Summary data on A/E issued deficiency notices and resolutions, QC notices of non-conformance, RFI statistics, Submittal statistics, Threshold Inspector's Log of non-conformance detailing new issues, resolved issues, pending issues and compliance schedule.
  - b. Summary report of "proactive" QC activities (i.e. pre-installation meetings, quality meetings, mockups, and subcontractor meetings.
  - c. Report on upcoming month's activities and milestone events in the QC program.

Under this revised plan, TAHD's performance of these delegated responsibilities will be assured in three primary ways. First, we have integrated new people (from PACB's staff) to the functions performed by TAHD. Second, we have strengthened that staff with the addition of Chris James, who has structural expertise, and Deb Emser, who provides MEP expertise. Third, we have redesigned report formats to allow much clearer communication of quality status and expectations. Fourth, we have streamlined processes and added staff to allow technicians to spend more than twice as much time in the field. All of this will enhance the performance of quality management functions.

#### *Subcontractor Quality Management*

Primary and continuous quality within the CM organization is inherently and necessarily vested in the subcontractors and material suppliers who are required to:

1. Identify a qualified individual who will assure each day's work is accomplished in accordance with document requirements.
2. Have a daily sign-off mechanism by this individual.
3. Have an in-house quality control program for material fabrication and provide documentation of these processes.

This plan focuses on execution, which will be accomplished in four primary ways:

1. The improved documentation process, particularly the daily sign-off process, will be much more closely utilized to assure performance of quality processes by the subcontractors.
2. Increased level of subcontractor monitoring through increased "field time" of QC technicians, as noted above.
3. PACB will initiate a "quality partnering process" designed to get subs to recommit to the highest level of quality performance.

**MEASURING  
SUCCESS**

One of the important and principal contributions of the Monthly Report is to develop specific metrics of quality success. By way of example, this can take the form of (1) improving the timing and efficiency of inspections; (2) setting progressively higher standards for reducing deficiency notices, etc. and rewarding improved performance; (3) determining the most effective utilization of mockups; or (4) establishing standards for timely review of quality issues and resolution thereof. These are just illustrations. The objective should be to establish a set of metrics that can helpfully gauge quality and measure improved performance, so that a culture of quality pervades all aspects of the project.

**WHAT IS  
DIFFERENT?**

This revised Quality Control Program improves upon the existing plan in several material ways. It:

1. Adds new people.
2. Strengthens the staff assigned to quality.
3. Establishes a new Quality Team to provide high-level oversight of quality program by PACMO, PACB and CP&A staff.
4. Streamlines and vastly improves quality management reports.
5. Encourages proactive quality management.
6. Improves communication.
7. More effectively engages and monitors subcontractor performance.
8. Adds a quality incentive program.
9. Promotes a more collaborative atmosphere.

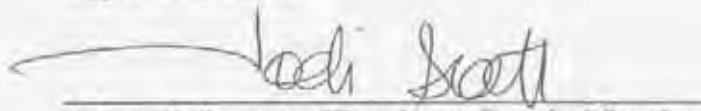
For all of these reasons, PACB submits this revised plan overview to the County.



ALAN SOLOWITZ  
DEPUTY INSPECTOR GENERAL  
ALAN SOLOWITZ  
ASSISTANT INSPECTOR GENERAL  
LEGAL COUNSEL

Dear Ms. Thompson:

Attached please find a copy of the Office of the Inspector General's (OIG)  
provide your responses by fax to (305) 570-2656  
Christopher Mazzeita  
Inspector General



Acknowledgment of Receipt or Proof of Service

9/4/03

Date

cc: Ms. Alina Hudak, Assistant County Manager  
Mr. Randolph J. Volenec, Cesar Pelli & Associates

APPENDIX B

19 WEST FLAGLER STREET SUITE 220 • MIAMI, FLORIDA 33130  
REPORT FRAUD ! HOTLINE (305) 579-2593 • WWW.MIAMIDADEIG.ORG

TEL. (305) 375-1946  
FAX. (305) 579-2656

# PERFORMING ARTS CENTER OF GREATER MIAMI

1444 Biscayne Boulevard - Suite 202  
Miami, Florida 33132  
Tel: 305.372.7611 - Fax: 305.372.7659



Gail L. Thompson, A.I.A.  
Director

October 1, 2003

Christopher Mazzella, Inspector General  
Office of the Inspector General  
19 West Flagler Street, Suite 220  
Miami, FL 33130

Re: Inspector General's Draft Audit Report of PACB Quality Control Program

Dear Mr. Mazzella:

I wish to extend my appreciation to you and your staff for preparing the draft audit of PACB's quality control program. We have been concerned for some time about Performing Arts Center Builders' (PACB) implementation of its quality control program relative to its contractual responsibilities to the County. This concern is expressed in numerous correspondences from PACMO to PACB, a sampling of which is attached to this response.

The concern was not specific to the documentation, or lack thereof. PACMO and its architect, Cesar Pelli & Associates (CP&A) were concerned with the disproportionate volume of errors being made in the field. We held numerous meetings with PACB and its quality control consultant to better understand the implementation process of the quality control program believing that the failures in the field were indicative of an inadequate program and/or poor implementation of the program.

Our efforts to achieve cooperation from PACB to improve the program or its implementation met with considerable resistance and an indication from PACB that (1) the program was being implemented as per contract, (2) PACB had passed on its primary contractual responsibility for quality control to its subcontractors, and that (3) there were no deficiencies in the implementation of the program.

However the deficiencies in the work continued in spite of these representations by PACB. PACMO requested that the Inspector General audit PACB's quality control program to either confirm PACB's position that the program was being implemented according to its contract. Or to confirm that there in fact was a connection between the considerable number of work deficiencies and poor implementation of the quality control program, thus failing to meet the intent of the contract requirements.

In fact the Inspector General's report clearly confirms our belief about PACB's failure to implement the program properly. Your report states that the required documentation to assert the proper implementation of the program either does not exist or is well below that required.

Further we have expressed concerns about the qualifications of the individuals responsible for administering the program and we have questioned whether this group has been given the support it needs from PACB's field and management personnel. We also note in your audit that the quality control function appears to be severely under-funded. This further substantiates our belief that PACB has inadequately provided for an effective quality control function.

2003 OCT -2 AM  
MDC-OFFICE OF THE  
INSPECTOR GENERAL

Confirming Memos, and other material. These have all been submitted to PACB for the purpose of bringing to the attention of its staff work that will require some corrective intervention.

In general PACB has acknowledged these deficiencies, and it has indicated that it intends to correct, other remedial effort. We would hope to influence PACB to a higher standard of performance and expectation of excellence. We expect that PACB will in turn influence its subcontractors to perform to the same higher standard.

I appreciate the opportunity to respond to your report and to the staff.

Best regards,

Sincerely,

A large, stylized handwritten signature in black ink, appearing to read "Gail L. Thompson". The signature is written over the printed name and extends to the right with a long horizontal stroke.

Gail L. Thompson

cc: Bill Johnson, Assistant County Manager - W. O. [unclear]

## CONTENTS

### Not included in this modified Appendix

**PACMO Letter:** July 24, 2003  
**Subject:** PACB Quality Control Program (Q.C.)

PACMO further expresses concerns relative to PACB's lack of an effective Quality Control Program. PACMO advises PACB that an audit of the program is being conducted by the Office of Inspector General. PACMO also advises PACB that PACB has not adequately responded to issues in a past PACMO letter relative to Quality Control. Response from PACB, dated August 20, 2003.

**PACB Letter:** July 16, 2003  
**Subject:** Quality Control Program (Q.C.)  
PACB's response to PACMO's letters dated June 11, 2003 and July 14, 2003

PACB asserts that all of PACMO's and CP&A's concerns relative to the Q.C. program were addressed in a March 20, 2003 Q.C. meeting. PACB further asserts that they have fulfilled its contractual requirements under Section 01440. PACB requests a meeting with PACMO to further discuss the issues.

**PACMO Letter:** June 11, 2003  
**Subject:** PACB Q.C. Program

PACMO reiterates that PACB's Q.C. Program remains an issue. PACMO attaches a June 4, 2003 letter by CP&A identifying the deficiencies and a re-issued February 21, 2003 letter with similar concerns.

**PACMO MEMO:** March 28, 2003  
**Subject:** Q.C. Organization Chart & Q.C. Program Contact List

PACMO distributes to its staff and CP&A PACB's Q.C. Org chart and program contact list. This list was provided by PACB in response to the March 20, 2003 meeting.

**CP&A Letter:** February 21, 2003  
**Subject:** CP&A Comments on PACB's Quality Control Program – Implementation Process Report

CP&A reviews and comments on the Q.C. Implementation Process Report.

**Subject:** Quality Control Program – Implementation process Report  
PACB letter dated January 27, 2003

PACMO continues to express concerns relative to PACB's Q.C. program. PACMO

**PACMO Letter:** July 29, 2002 **Not included in this modified Appendix**  
**Subject:** Quality Control Concerns

CP&A conducts a review of PACB's Q.C. program. CPA&A asserts that the program is incomplete and was not submitted in accordance with the time requirements of the contract. In addition, they assert that the program is lacking a basic description of the Q.C. outline, lacking a submittal schedule, and not in compliance with Section 01490 – 1.03 of the Contract Documents "Organization Chart".

**CP&A MEMO:** June 6, 2002 **Not included in this modified Appendix**  
**Subject:** Review of PACB Quality Control Reports

CP&A asserts that construction errors and deficiencies continue to increase due to PACB's lack of Q.C. They assert that the design team continues to spend additional time

**CP&A MEMO:** September 30, 2003 **Included**  
**Subject:** CP&A response to OIG Draft Audit Report dated 7/18/03  
Construction Manager Quality Control Program

This memo summarizes CP&A's review of above cited subject.

**Owner Issued Deficiency Notices:** Various Dates

**Not included in this modified Appendix**

**LENA RESPONSE TO VIO RIAL**

Cesar Pelli FAA

Fred W Clarke FAS

Rafael Pelli AA

September 30, 2003

Ms. Gail Thompson, Director  
Performing Arts Center Management Office  
1444 Biscayne Boulevard, Suite 202  
Miami, FL 33132

Subject: Office of the Inspector General  
Construction Manager Quality Control Program  
Draft Audit Report dated July 18, 2003

Dear Gail:

CP&A has reviewed the above referenced Draft Audit Report. We do not take issue with the conclusions of the Report, as the findings are well documented and consistent with our experience. What we offer, in the following observations, are comments supplemental to the conclusions outlined in the Report. Specifically, the CM QC Program has failed to proactively identify and correct deficiencies and errors in construction prior to final installation in the field.

It is the opinion of the A/E team that these failures are a result of the lack of oversight of the subcontractors by the CM QC personnel. In addition, there appears to be a lack of understanding of all of the project requirements, such as acoustic separation of spaces, level of finishes on exposed surfaces, etc., on the part of the CM and QC personnel. While a majority of the construction errors in the field to date are repairable or replaceable, the investment in man hours, by the CM, subcontractors, A/E and Owner, as well as the materials necessary to make those repairs, is detrimental to the project not only in terms of cost and schedule, but in terms of worker morale and final product, since the repairs are seldom as good as the original installation should have been.

1. The Report clearly and succinctly outlines the Background and Evolution of the QC Program as practiced on this Project.
2. The Report identifies the unsatisfactory QC Program documentation and record keeping. CP&A concurs with this finding as our experience has indicated a lack of documentation, as well as, late and incomplete reports.
3. The Report, under the heading "Construction Manager QC Program Requirements", indicates that PACB has chosen to implement the required QC Program by delegating to the subcontractors the primary responsibility of conducting and documenting required inspections. This abdication of primary responsibility by PACB has proven, in CP&A's opinion, to be wholly unsatisfactory. Most subcontractors have limited QC administrative experience and the result is an inconsistent array of reports or information contained within





**Cesar Pelli & Associates Inc** Architects

Gail Thompson

CP&A Review of OIG Construction Manager Quality Control Program Draft Audit Report

September 30, 2003

Page 3

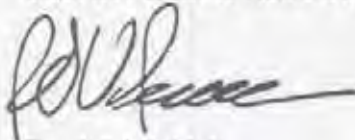
obligated to make the necessary repairs without cost to the Owner. Valuable manpower assets are utilized in all phases of this process, and the overall project schedule is inevitably negatively impacted. The frequency of deficiencies has increased in the past few months as work progresses into areas that impact the finishes and ultimately visible portions of the buildings.

Also attached is the Site Confirming Memo Log that identifies site related issues documenting clarifications or corrections required in the field. As of the date of this letter, there have been approximately 870 Site Confirming Memos issued. Of that number, at least half have been issued correcting construction errors in the field. The majority of the remaining issues have been clarifications and interpretations of the Construction Documents. Again, construction errors remediation require a significant investment of time by all parties that impact other work activities and the overall project budget and schedule. Site Confirming Memo errors, unlike those predominantly noted in the Deficiency Log, have typically dealt with structural issues that will ultimately be unseen in the finished building. However, all of the deficiency corrections have been engineered and reviewed to maintain the structural integrity of the project.

As has been stated on many occasions, in numerous forums, the quality of the Project cannot and will not be compromised. To that end, it is incumbent on PACB to reorganize their contractually required Quality Control Program into an effective vehicle to ensure compliance with the Contract Documents and accountability for the quality of the work.

Sincerely,

CESAR PELLI & ASSOCIATES, INC.



Randolph J. Volenec,  
Senior Project Manager

Cc: J. Sanchez, PACMO  
M. McDonnell, CP&A

From: Gail L. Thompson



report. This should be added to CP&A's input included in the original PACMO response dated Wednesday, October 1, 2003.

Thanks in advance for your cooperation.

APPENDIX C

MEMORANDUM

DATE: October 7, 2003  
PROJECT: MDPAC  
SUBJECT: PACB Revised Quality Plan Overview  
FROM: Randolph Volenec – Cesar Pelli & Associates

---

On September 29, 2003, a Project Principals Meeting was held at the Miami International Airport. Attached are PACB's Agenda, and PACB's Revised Quality Plan Overview, the subject of this Memorandum. Following are CP&A comments to PACB's Revised Quality Plan Overview:

Executive Summary

1. PACB's statement indicating their revised Quality Management Process "Meets or exceeds all Contract requirements" is incorrect. As will be shown in the following, PACB continues to avoid ultimate responsibility for Quality Control issues pertaining to deficient or non-compliant work placed in the field.
2. PACB's plan to establish a Quality Team to develop a "collaborative approach among ...PACMO, CP&A, PACB and all of their respective subconsultants and subcontractors" cannot be utilized to share the responsibility, and therefore the costs and time associated with, implementing an effective and proactive QC program. That responsibility, by virtue of their Amended Agreement, rests solely with the Construction Manager.

Assessment and Objectives

1. CP&A disagrees with PACB's assessment that "the plan currently in place is generally but not completely compliant with the (Specification) Section 01440." Were the plan currently in place generally compliant, the quantity and nature of many of the existing construction deficiencies and errors would be significantly reduced.
2. CP&A agrees that "Specific building deficiencies are being corrected" and, as stated in PACB's presentation at this meeting, that none of the deficiencies recorded to date cannot be corrected in the field, we remain convinced that a truly effective QC program would eliminate or significantly reduce the initial incidents of deficient work and improve the negative cost and time impacts, the ultimate finished product quality, and the overall morale of the field personnel by not having to remove and/or repair deficient work.
3. PACB's stated objectives, in CP&A's opinion, fail to reach to the heart of the problem with the QC program; that is, monitoring of the work put in place on the project by an adequate number of highly qualified and skilled field personnel, commissioned by and reporting to PACB, that are charged with the responsibility of delivering a project of the highest quality.

Specification Section 01490, 1.01, B. "...the Construction manager shall establish, provide, and maintain an effective Quality Control Program (and)...the Construction Manager shall assume full responsibility for accomplishing the stated purpose." PACB must not abdicate their responsibilities to create and maintain an effective

Control Program. ~~Project quality responsibilities" as a result of the~~ ~~with~~ ~~increased emphasis on inspecting subcontractors with a history of deficient work, is essential to reducing the quantity of deficiencies and thereby improve the quality of the installations.~~

3. The "PACB Quality Team Detailed Organization Chart" identifies personnel and responsibilities under this proposed reorganization. Previously, TAHD had two field inspectors that were responsible for documenting and reporting their observations. Under the new Organization Chart, TAHD has identified two field inspectors with an additional TBD (To Be Determined) Technician. PACB is also indicating an MEP Coordinator whose responsibilities are defined as "Liaison with and coordinator of MEP subcontractors including quality efforts..." With the indication that the MEP Coordinator will not be devoting full time efforts to the QC process, there appears, in CP&A's opinion, to be a net addition of one-half to a potential one and one-half again concerns CP&A as not addressing the core problem with the QC program.

## Cesar Pelli & Associates Inc Architects

### MEMORANDUM:

Subject: PACB Revised Quality Plan Overview

Date: October 7, 2003

Page 3

4. Under "Subcontractor Quality Management," PACB maintains the "Primary and continuous quality within the CM organization is inherently and necessarily vested in the subcontractors and material suppliers..." This is the same methodology that has resulted in the extreme number of deficiencies in Quality to date on the project.
5. Under "PACMO Responsibilities," Item 6), PACB indicates "it does not have contractual privity with the Owner Direct Purchase material providers." Therefore, PACB is enlisting PACMO's collaboration "to assure quality requirements for ODP are met." Under Specifications Section 00810, Modifications to General Conditions Owner Purchases, 1.01.A "The Construction Manager shall remain fully responsible for choosing vendors, determining quantities, coordinating delivery, scheduling purchases and deliveries..." and under 1.03.D, "the Construction Manager shall insure that the directly purchased materials conform to the Specifications and Drawings, determine prior to incorporation into the work whether they are patently defective..." These contractual documents maintain PACB's responsibility for the quality control of the OPD participants.
6. Under "PACMO Responsibilities," Item 2) page 8, PACB states "With full time (threshold) inspectors assigned to this project, immediate inspections, when requested, will greatly aid subcontractors and facilitate a more collaborative and quality conscious work environment." This particular subject has been dealt with over many months in many meetings. PACB, by contract, is required to give a 48 hour notice of request for inspection. This allows the inspectors adequate time to research the necessary documents and schedule their workloads to minimize overtime. In the spirit of cooperation, the A/E has agreed to accept a 24 hour notice of request for inspection. This blatant attempt by PACB to circumvent their contractual obligation in an effort to offset their apparent inability to plan 24 hours in advance is unacceptable. In addition, to attempt to insert the inspection notification under the guise of a QC requirement, after all the prior meetings and discussions, is unconscionable.
7. Under "PACMO Responsibilities," Item 3) page 8, PACB requests early resolution of CORs. PACMO and CP&A agree that early resolution and payment of legitimate Change Orders to subcontractors is beneficial to the project. PACB bears concurrent responsibility to move the COR process forward in a timely manner.

It is important to note the subject PACB Revised Quality Plan Overview document lacks specificity as to details and implementation. Consequently, CP&A's response addresses only those items outlined in the Overview. CP&A encourages PACB solicit input from all affected parties once a more comprehensive plan is developed, and prior to final implementation of that plan. As has been documented, the existing plan has proven to be both unworkable and ineffective. CP&A welcomes all efforts by PACB to improve their Quality Control Program, and will continue to work with PACB toward that end.

## 2. Issue Resolution

### 2.1 Proposed Mediation Schedule and Plan

### 2.2 Approach

## 3. Amendment

### 3.1 Timing

### 3.2 Agreement on Language

### 3.3 OCIP Insurance

# MIAMI PERFORMING ARTS CENTER

## REVISED QUALITY PLAN OVERVIEW

SEPTEMBER 29, 2003

### OIG Comment

This Revised Quality Plan Overview, provided by PACB and commented on by Cesar Pelli & Associates is slightly different from the Revised Quality Control Program provided to the OIG by PACB in its response. (See Appendix A for PACB's complete response to the OIG).



2. Addresses the issues raised in the OIG report.

4. ~~Greatly improve communication~~

among the PACMO, CP&A, PACB and all of their respective subconsultants and subcontractors.

ASSESSMENT AND OBJECTIVES

1. The relevant contract requirements are captured in Specification Section 01440. These specifications outline basic requirements but give the CM considerable latitude in developing the details of the quality management plan.
2. The plan currently in place is generally but not completely compliant with the Section 01440. Given, the current realities of the project, the plan does not provide for adequate staffing, does not set forth an effective communication plan and does not adequately address some of the special requirements of this project.

3. The larger issue is one of execution. Documentation of quality activities is incomplete and sometimes unclear. Subcontractor compliance and participation has been uneven. Reporting of field inspections are too infrequent. Specific building deficiencies are being corrected, however, underlying causes of those deficiencies have not been addressed consistently.
4. The principal objectives of the revised Quality Management Plan are to:
  - Create a high level oversight of the entire quality process by establishing a high-level, collaborative quality team.
  - Add key resources to PACB's quality staff.
  - Improve communication among team members
  - Significantly improve quality documentation to comply with the contract, improve communication and provide PACB and the Quality Team with sufficient and timely information to assure subcontractor compliance with the quality program.
  - Assure that quality technicians spend more time in the field to oversee work in place.
  - Improve subcontractor compliance.

**OVERSIGHT – THE  
QUALITY TEAM**

Recognizing that the desire and commitment to create a quality project is shared by the entire organization of PACMO, CPA and PACB, we will create a Quality Team that will provide oversight and guidance to the entire quality management process. The team will be comprised of the following people:

PACMO	-	Willie Peña
PACMO	-	Ola Aluko
CP&A	-	Randy Volenec
PACB OPS	-	Ron Murtha
PACB QC	-	Bob Laramie

**QUALITY FUNCTIONS  
AND  
RESPONSIBILITIES**

TAHD - Neil Hall  
PACT - Stanley Arkin

The Quality Team will meet as frequently as it deems necessary. It will set up systems to assure compliance with the Quality Plan. It will intervene where appropriate to resolve specific quality issues.

The distribution of overall project quality responsibilities is depicted in the attached organization charts. These charts respond to the requirements of Specification Section 01440 but importantly, add further resources not contemplated in the specifications and not previously present on the project. It is important to articulate the respective responsibilities of the stakeholders with respect to quality and how the parties communicate and interface with each other.

**PACB Responsibilities**

PACB bears primary responsibility for assuring construction quality on the project. It achieves this in three primary ways:

- 1) Through directly employed quality management staff.
- 2) Through the separate quality organization required by Specification Section 01440 (currently performed by TAHD)
- 3) Through quality assurance staff required from and provided by vendors and subcontractors.

The division of responsibilities among these three elements is described below.

***PACB's Staff***

The specific functions and roles performed by PACB's direct quality staff are:

- 1) Direct all subcontractor efforts including their QC

responsibilities. TAH has been engaged to assist PACB in this effort.

- 2) Within the Document Control group, manage all A/E Construction Documents, including design changes, RFI's and deficiencies generated by the A/E and Threshold Inspectors.
- 3) Coordinate and schedule all project activities including quality activities such as:
  - (1) Shop Drawing submittals/logs
  - (2) Material testing
  - (3) Threshold Inspection
  - (4) Pre-installation conferences
  - (5) Regulatory inspections
- 4) Oversee and manage performance of the separate quality organization (TAHD).
- 5) Manage communication and reporting within the entire project team on all quality issues to assure everyone is aligned on quality objectives, issues and responsibilities.

Under the revised plan, PACB is adding a key resource, Bob Laramie, to lead PACB's quality management process. Adding this resource will achieve three primary benefits. First, Bob's leadership will greatly improve communication, management and reporting on all QA/QC activities. Second, PACB will much more closely assist TAHD in performance of its obligations (described below). Third, Bob will be a principal liaison with CP&A to assure that QA/QC efforts are more proactively aimed at the most sensitive elements of the project.

#### *Separate Quality Organization (TAHD)*

TAHD has been delegated responsibility, under 01440, to:

- 1) Develop the detailed QC Plan, consistent with contract requirements.

- 2) Maintain knowledge of and status of construction documents including changes, RFI's and submittals.
- 3) Work with and establish liaison with subcontractors, clarifying their QC role and communication processes with TAH
- 4) Participate in QC portion of subcontractor preconstruction conferences.
- 5) Run additional periodic subcontractor meetings which focus on quality, rewarding excellent performance and establishing improved procedures to avoid re-experiencing deficiencies
- 6) Perform intermittent inspections on subcontractors' work.
- 7) Inspect major fabrication plants (those fabricating/assembling specific products for the project) to verify satisfactory procedures and quality control processes (regular plant quality control visits are not included)
- 8) Receive and manage quality documentation:
  - Subcontractor DIR/Logs
  - Quality reports from vendors
  - Quality reports from vendors for Owner-Directed Purchases.
  - Special Inspection reports
  - Material testing reports
  - DIR's generated by TAH technicians
  - Minutes of quality aspects of precons and periodic quality meetings
- 9) Prepare Monthly QC Summary Reports which analyze and assemble the prior month's activities enabling appropriate levels of management to be well informed on:

- Summary data on A/E issued deficiency notices and resolutions, QC notices of non-conformance, RFI statistics, Submittal statistics, Threshold Inspector's Log of non-conformance detailing new issues, resolved issues, pending issues and compliance schedule.
- Summary report of "proactive" QC activities (i.e. preconstruction meetings, quality expectation meetings, mockups, and subcontractor meetings).
- Report on upcoming month's activities and milestone events in the QC program.

Under this revised plan, TAHD's performance of these delegated responsibilities will be enhanced in three primary ways. First, we have integrated new people (from PACB's staff) to the functions performed by TAHD. Second, we have strengthened that staff with the addition of Chris James, who has structural expertise, and Deb Emser, who provides MEP expertise. Third, we have or will redesign report formats to allow much clearer communication of quality status and expectations. Fourth, we have streamlined processes and added staff to allow technicians to spend more than twice as much time in the field. All of this will enhance the performance of quality management functions.

#### *Subcontractor Quality Management*

Primary and continuous quality within the CM organization is inherently and necessarily vested in the subcontractors and material suppliers who are required to:

- 1) Identify a qualified individual who will assure each day's work is accomplished in accordance with document requirements.
- 2) Have a daily sign-off mechanism by this individual.
- 3) Have an in-house quality process.

- 4) Provide documentation of this process for materials provided.

None of this is materially different from the existing quality plan. What needs to happen is better execution, which will be accomplished in four primary ways.

- 1) The improved documentation process, particularly the daily sign-off process, will be much more closely utilized to assure performance of quality processes by the subcontractors.
- 2) Increased level of subcontractor monitoring through increased "field time" of QC technicians, as noted above.
- 3) PACB will initiate a "quality partnering process" designed to get subs to recommit to the highest level of quality performance.
- 4) It is axiomatic that incentives work better than penalties. To that end, PACB will initiate a quality incentive program, much like the effective safety incentive program, to celebrate and recognize especially noteworthy quality performance by subcontractors and suppliers.

#### **PACMO Responsibilities**

Very specific quality functions are vested with PACMO, which are performed either directly by PACMO or through CP&A. These responsibilities include:

- 1) A continuous process to provide quality documents, and timely answers to RFI's and, issue necessary changes.
- 2) Timely review and approval of submittals.
- 3) Intermittent architectural and engineering inspections.
- 4) Threshold inspections by the Threshold Building Special

Inspector to certify the structural elements of the building are properly constructed.

- 5) Specific materials testing by an independent laboratory.
- 6) Collaboration with PACB to assure quality requirements for Owner Direct Purchase Materials (ODP) are met. PACB cannot do this alone, as it does not have contractual privity with the ODP material providers.
- 7) Participate and collaborate on and with the Quality Incentive Program of rewards and recognition.

It is critical that the County correspondingly improve execution of its quality obligations. The key areas that will greatly assist quality improvement are:

- 1) Updated drawings that timely incorporate changes.
- 2) Timely threshold inspections and material testing. With full time inspectors assigned to this project, immediate inspections, when requested, will greatly aid subcontractors and facilitate a more collaborative and quality conscious work environment.
- 3) Early resolution of CORs. While not directly tied to quality, it is effectively impossible to engage subcontractors in higher levels of performance if they are financially impacted by lack of timely approval of and payment for legitimate changes.



**MEASURING  
SUCCESS**

One of the important and principal contributions of the Monthly Report is to develop specific metrics of quality success. This can take the form of (1) improving the timing and efficiency of inspections, (2) setting progressively higher standards for reducing deficiency notices, etc. and rewarding improved performance; (3) determining the most effective utilization of mockups; or (4) establishing standards for timely review of quality issues and resolution thereof. These are just illustrations. The objective should be to establish a set of metrics that can helpfully gauge quality and measure improved performance, so that a culture of quality pervades all aspects of the project.

**DETAILS**

This overview and the attached organization charts depict the principal features of the revised Quality Management Plan. Considerably more detail needs to be developed. The specific details to be developed are set forth in the attached Table of Contents. The Quality Team has met and agreed upon the key principles described herein. PACB shall prepare all the materials suggested in the Table of Contents and submit the detailed revised Quality Plan by October 10, 2003.

**WHAT IS  
DIFFERENT?**

This revised Quality Plan improves upon the existing plan in several material ways. It:

1. Adds new people.
2. Strengthens the staff assigned to quality.
3. Provides greater oversight of quality activities by PACB and PACMO staff.
4. Establishes a new Quality Team to provide high-level oversight of quality.
5. Streamlines and vastly improves quality management reports.
6. Encourages proactive quality management
7. Improves communication
8. More effectively engages and monitors subcontractor performance
9. Adds a quality incentive program.

10. Promotes a more collaborative atmosphere.

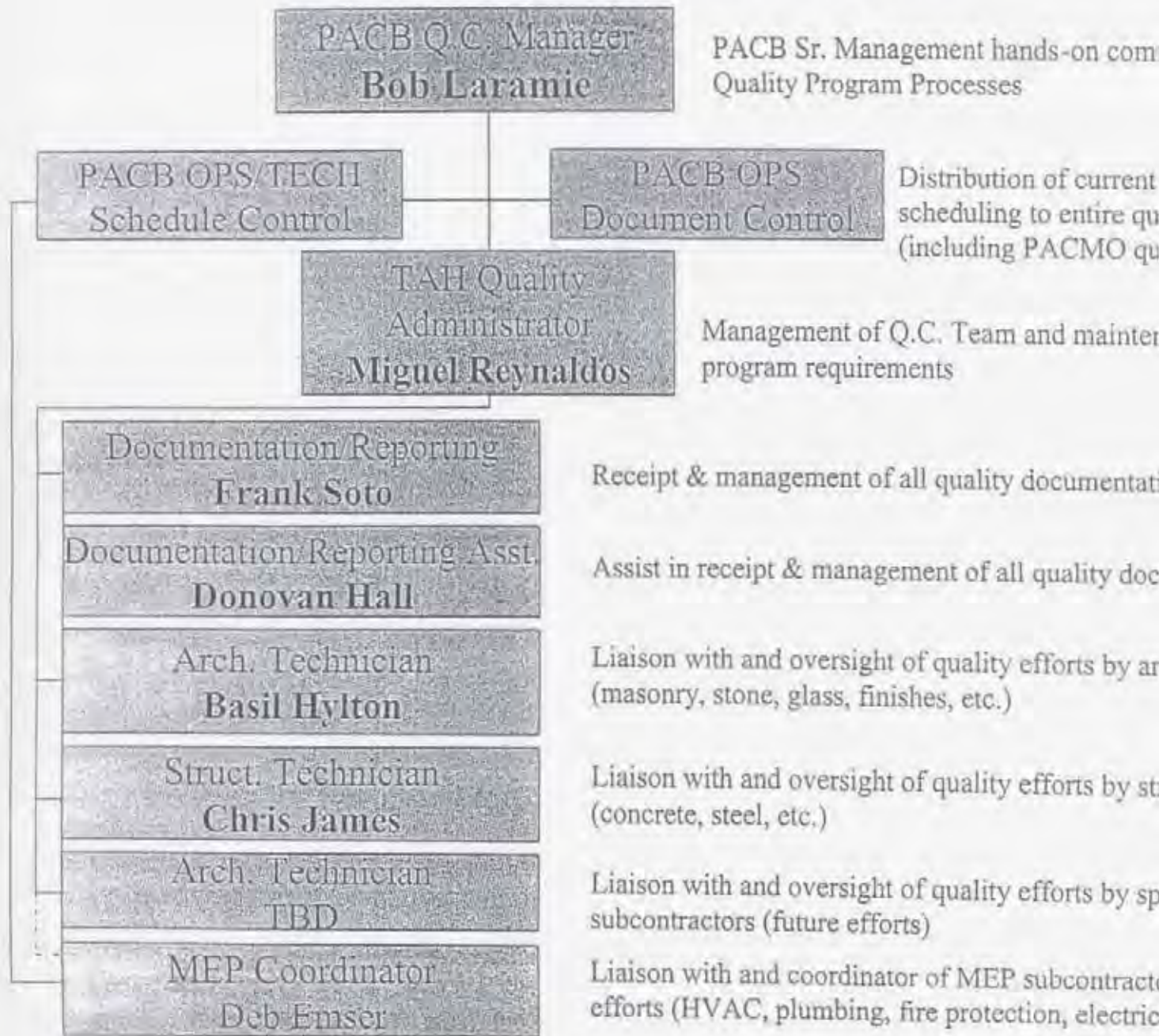
For all of these reasons, PACB submits this revised plan overview to the County and urges its immediate further development and adoption.

# OVERALL PROJECT QUALITY ORGANIZATION CHART



# PACB QUALITY TEAM

## Detailed Organization Chart



EARTHWORK

PIRTANWA/AMT/CEB

DECK TIGHT  
TROY CHINAS  
ROOFING

KRAMA  
RUDY RAMKUSHIN  
DOORS & HARDWARE

PROTECH CAULKING  
KEITH WYLLIE  
WATERPROOFING

MADER SOUTHEAST  
DAVID TIMPE  
FIREPROOFING

FRENEY  
BRUCE HALEY  
ELECTRICAL

MILLWORK

SERE SAUSA  
CHARLES EMERSON  
THEATER SEATING

HIFCOR  
JERRY SILVA  
TELESCOPIC SEALING

TRACTEL  
TROY  
FACADE MAINT. EQUIP

SITE UTILITIES

FOOLE & KENT  
FRITZ SCHMIDT-SPRING  
BOB MESSER - HVAC  
ED MARRIOTT - INSULATION  
HVAC & PLUMBING

REBENDY ELECTRIC  
JASON POTTER - BOB  
GERRY JEDIDINE - BOB  
SILVE BROWN - DON  
KEVIN GONARD - COR  
ELECTRICAL SYSTEMS

SCHINDLER  
TROY  
ELEVATORS

PERFORMING  
ARTS CENTER OF  
GREATER MIAMI

1444 Biscayne Boulevard · Suite 202  
Miami, Florida 33132  
Tel: 305.372.7611 · Fax: 305.372.7659



Gail L. Thompson, A.I.A.  
Director

VIA FACSIMILE: 305.579.2656

Memorandum

To: Chris Mazzella, Inspector General

From: Gail L. Thompson

Cc: Steve Pollock

Date: October 10, 2003

Re: Supplement to PACB Quality Control Program Audit Report

---

Please accept the attached as a supplement to the PACB Quality Control Program Audit report. This should be added to CP&A's input included in the original PACMO response dated Wednesday, October 1, 2003.

Thanks in advance for your cooperation.

MEMORANDUM

DATE: October 7, 2003  
PROJECT: MDPAC  
SUBJECT: PACB Revised Quality Plan Overview  
FROM: Randolph Volenc - Cesar Pelli & Associates

---

On September 29, 2003, a Project Principals Meeting was held at the Miami International Airport. Attached are PACB's Agenda, and PACB's Revised Quality Plan Overview, the subject of this Memorandum. Following are CP&A comments to PACB's Revised Quality Plan Overview:

Executive Summary

1. PACB's statement indicating their revised Quality Management Process "Meets or exceeds all Contract requirements" is incorrect. As will be shown in the following, PACB continues to avoid ultimate responsibility for Quality Control issues pertaining to deficient or non-compliant work placed in the field.
2. PACB's plan to establish a Quality Team to develop a "collaborative approach among ...PACMO, CP&A, PACB and all of their respective subconsultants and subcontractors" cannot be utilized to share the responsibility, and therefore the costs and time associated with, implementing an effective and proactive QC program. That responsibility, by virtue of their Amended Agreement, rests solely with the Construction Manager.

Assessment and Objectives

1. CP&A disagrees with PACB's assessment that "the plan currently in place is generally but not completely compliant with the (Specification) Section 01440." Were the plan currently in place generally compliant, the quantity and nature of many of the existing construction deficiencies and errors would be significantly reduced.
2. CP&A agrees that "Specific building deficiencies are being corrected" and, as stated in PACB's presentation at this meeting, that none of the deficiencies recorded to date cannot be corrected in the field, we remain convinced that a truly effective QC program would eliminate or significantly reduce the initial incidents of deficient work and improve the negative cost and time impacts, the ultimate finished product quality, and the overall morale of the field personnel by not having to remove and/or repair deficient work.
3. PACB's stated objectives, in CP&A's opinion, fail to reach to the heart of the problem with the QC program; that is, monitoring of the work put in place on the project by an adequate number of highly qualified and skilled field personnel, commissioned by and reporting to PACB, that are charged with the responsibility of delivering a project of the highest quality.

## Cesar Pelli & Associates Inc Architects

### MEMORANDUM:

Subject: PACB Revised Quality Plan Overview

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#### Oversite – The Quality Team

1. CP&A does not object to the formation of a Quality Team as a vehicle for enhancing communications and providing guidance to PACB in carrying out their QC responsibilities. What must remain paramount, however, are PACB's contractual responsibilities, as defined in Specification Section 01440, 1.01, A. "...the Construction Manager shall establish, provide, and maintain an effective Quality Control Program (and)...the Construction Manager shall assume full responsibility for accomplishing the stated purpose." PACB must not abdicate their responsibilities to create and maintain an effective program.

#### Quality Functions and Responsibilities

1. PACB's organization charts and commentary related to the "distribution of overall project quality responsibilities", as noted above under "Oversite – The Quality Team" again cannot diffuse PACB's contractual obligations to establish, provide, and maintain an effective Quality Control Program.
2. Under "Separate Quality Organization (TAHD)" references PACB's delegation of QC responsibilities to TAHD. CP&A remains concerned that the primary sources of QC deficiencies to date have involved work manufactured or constructed by subcontractors. Item 6), of 9, is the only reference to QC work under this category that, in CP&A's opinion, deals with this primary source of deficiencies. The remaining eight work items are administrative. Under Item 6), the task is defined to "Perform **intermittent** inspections on subcontractors' work (emphasis added)." It is CP&A's contention that ongoing inspections, not intermittent, with increased emphasis on inspecting subcontractors with a history of deficient work, is essential to reducing the quantity of deficiencies and thereby improve the quality of the installations.
3. The "PACB Quality Team Detailed Organization Chart" identifies personnel and responsibilities under this proposed reorganization. Previously, TAHD had two field inspectors that were responsible for documenting and reporting their observations. Under the new Organization Chart, TAHD has identified two field inspectors with an additional TBD (To Be Determined) Technician. PACB is also indicating an MEP Coordinator whose responsibilities are defined as "Liaison with and coordinator of MEP subcontractors **including** quality efforts..." With the indication that the MEP Coordinator will not be devoting full time efforts to the QC process, there appears, in CP&A's opinion, to be a net addition of one-half to a potential one and one-half additional staff to inspect and report on the actual field work of the subcontractors over what has been occurring to date. All additional staff indicated on the Organization Chart are purely administrative. This again concerns CP&A as not addressing the core problem with the QC program.



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4. Under "Subcontractor Quality Management," PACB maintains the "Primary and continuous quality within the CM organization is inherently and necessarily vested in the subcontractors and material suppliers..." This is the same methodology that has resulted in the extreme number of deficiencies in Quality to date on the project.
5. Under "PACMO Responsibilities," Item 6), PACB indicates "it does not have contractual privity with the Owner Direct Purchase material providers." Therefore, PACB is enlisting PACMO's collaboration "to assure quality requirements for ODP are met." Under Specifications Section 00810, Modifications to General Conditions Owner Purchases, 1.01.A "The Construction Manager shall remain fully responsible for choosing vendors, determining quantities, coordinating delivery, scheduling purchases and deliveries..." and under 1.03.D, "the Construction Manager shall insure that the directly purchased materials conform to the Specifications and Drawings, determine prior to incorporation into the work whether they are patently defective..." These contractual documents maintain PACB's responsibility for the quality control of the OPD participants.
6. Under "PACMO Responsibilities," Item 2) page 8, PACB states "With full time (threshold) inspectors assigned to this project, immediate inspections, when requested, will greatly aid subcontractors and facilitate a more collaborative and quality conscious work environment." This particular subject has been dealt with over many months in many meetings. PACB, by contract, is required to give a 48 hour notice of request for inspection. This allows the inspectors adequate time to research the necessary documents and schedule their workloads to minimize overtime. In the spirit of cooperation, the A/E has agreed to accept a 24 hour notice of request for inspection. This blatant attempt by PACB to circumvent their contractual obligation in an effort to offset their apparent inability to plan 24 hours in advance is unacceptable. In addition, to attempt to insert the inspection notification under the guise of a QC requirement, after all the prior meetings and discussions, is unconscionable.
7. Under "PACMO Responsibilities," Item 3) page 8, PACB requests early resolution of CORs. PACMO and CP&A agree that early resolution and payment of legitimate Change Orders to subcontractors is beneficial to the project. PACB bears concurrent responsibility to move the COR process forward in a timely manner.

It is important to note the subject PACB Revised Quality Plan Overview document lacks specificity as to details and implementation. Consequently, CP&A's response addresses only those items outlined in the Overview. CP&A encourages PACB solicit input from all affected parties once a more comprehensive plan is developed, and prior to final implementation of that plan. As has been documented, the existing plan has proven to be both unworkable and ineffective. CP&A welcomes all efforts by PACB to improve their Quality Control Program, and will continue to work with PACB toward that end.

PERFORMING ARTS CENTER OF GREATER MIAMI

PROJECT PRINCIPAL'S MEETING

September 29, 2003

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AGENDA

1. Quality Plan

1.1 Overview Presentation

1.2 Review of Plan Summary

1.3 Going Forward – Next Steps

2. Issue Resolution

2.1 Proposed Mediation Schedule and Plan

2.2 Approach

3. Amendment

3.1 Timing

3.2 Agreement on Language

3.3 OCIP Insurance

4. Other

# MIAMI PERFORMING ARTS CENTER

## REVISED QUALITY PLAN OVERVIEW

SEPTEMBER 29, 2003

### OIG Comment

This Revised Quality Plan Overview, provided by PACB and commented on by Cesar Pelli & Associates is slightly different from the Revised Quality Control Program provided to the OIG by PACB in its response. (See Appendix A for PACB's complete response to the OIG).

**EXECUTIVE  
SUMMARY**

Assuring the Performing Arts Center of Greater Miami is completed in accordance with the highest quality aspirations possible is the most important objective of all stakeholders and it is an objective all stakeholders hold in common. To that end PACB has developed and proposes a revised and reorganized Quality Management Process, described more fully below. The revised Quality Management Process:

1. Meets or exceeds all Contract requirements.
2. Addresses the issues raised in the OIG report.
3. Adds additional highly qualified people.
4. Greatly improves communication.
5. Enables more proactive solutions.
6. Establishes a Quality Team to assure the plan meets its objectives and makes mid-course corrections if needed.
7. Provides a better means of assuring subcontractor cooperation and compliance.

PACB accepts primary responsibility for implementing and assuring quality performance in construction but truly effective quality management is a philosophy that demands a collaborative approach among the PACMO, CP&A, PACB and all of their respective subconsultants and subcontractors.

**ASSESSMENT AND  
OBJECTIVES**

1. The relevant contract requirements are captured in Specification Section 01440. These specifications outline basic requirements but give the CM considerable latitude in developing the details of the quality management plan.
2. The plan currently in place is generally but not completely compliant with the Section 01440. Given, the current realities of the project, the plan does not provide for adequate staffing, does not set forth an effective communication plan and does not adequately address some of the special requirements of this project.

3. The larger issue is one of execution. Documentation of quality activities is incomplete and sometimes unclear. Subcontractor compliance and participation has been uneven. Reporting of field inspections are too infrequent. Specific building deficiencies are being corrected, however, underlying causes of those deficiencies have not been addressed consistently.
4. The principal objectives of the revised Quality Management Plan are to:
  - Create a high level oversight of the entire quality process by establishing a high-level, collaborative quality team.
  - Add key resources to PACB's quality staff.
  - Improve communication among team members
  - Significantly improve quality documentation to comply with the contract, improve communication and provide PACB and the Quality Team with sufficient and timely information to assure subcontractor compliance with the quality program.
  - Assure that quality technicians spend more time in the field to oversee work in place.
  - Improve subcontractor compliance.

**OVERSIGHT – THE  
QUALITY TEAM**

Recognizing that the desire and commitment to create a quality project is shared by the entire organization of PACMO, CPA and PACB, we will create a Quality Team that will provide oversight and guidance to the entire quality management process. The team will be comprised of the following people:

PACMO	-	Willie Peña
PACMO	-	Ola Aluko
CP&A	-	Randy Volenec
PACB OPS	-	Ron Murtha
PACB QC	-	Bob Laramie

TAHD - Neil Hall  
PACT - Stanley Arkin

The Quality Team will meet as frequently as it deems necessary. It will set up systems to assure compliance with the Quality Plan. It will intervene where appropriate to resolve specific quality issues.

**QUALITY FUNCTIONS  
AND  
RESPONSIBILITIES**

The distribution of overall project quality responsibilities is depicted in the attached organization charts. These charts respond to the requirements of Specification Section 01440 but importantly, add further resources not contemplated in the specifications and not previously present on the project. It is important to articulate the respective responsibilities of the stakeholders with respect to quality and how the parties communicate and interface with each other.

**PACB Responsibilities**

PACB bears primary responsibility for assuring construction quality on the project. It achieves this in three primary ways:

- 1) Through directly employed quality management staff.
- 2) Through the separate quality organization required by Specification Section 01440 (currently performed by TAHD)
- 3) Through quality assurance staff required from and provided by vendors and subcontractors.

The division of responsibilities among these three elements is described below.

***PACB's Staff***

The specific functions and roles performed by PACB's direct quality staff are:

- 1) Direct all subcontractor efforts including their QC

responsibilities. TAH has been engaged to assist PACB in this effort.

- 2) Within the Document Control group, manage all A/E Construction Documents, including design changes, RFI's and deficiencies generated by the A/E and Threshold Inspectors.
- 3) Coordinate and schedule all project activities including quality activities such as:
  - (1) Shop Drawing submittals/logs
  - (2) Material testing
  - (3) Threshold Inspection
  - (4) Pre-installation conferences
  - (5) Regulatory inspections
- 4) Oversee and manage performance of the separate quality organization (TAHD).
- 5) Manage communication and reporting within the entire project team on all quality issues to assure everyone is aligned on quality objectives, issues and responsibilities.

Under the revised plan, PACB is adding a key resource, Bob Laramie, to lead PACB's quality management process. Adding this resource will achieve three primary benefits. First, Bob's leadership will greatly improve communication, management and reporting on all QA/QC activities. Second, PACB will much more closely assist TAHD in performance of its obligations (described below). Third, Bob will be a principal liaison with CP&A to assure that QA/QC efforts are more proactively aimed at the most sensitive elements of the project.

#### *Separate Quality Organization (TAHD)*

TAHD has been delegated responsibility, under 01440, to:

- 1) Develop the detailed QC Plan, consistent with contract requirements.

- 2) Maintain knowledge of and status of construction documents including changes, RFI's and submittals.
- 3) Work with and establish liaison with subcontractors, clarifying their QC role and communication processes with TAH
- 4) Participate in QC portion of subcontractor preconstruction conferences.
- 5) Run additional periodic subcontractor meetings which focus on quality, rewarding excellent performance and establishing improved procedures to avoid re-experiencing deficiencies
- 6) Perform intermittent inspections on subcontractors' work.
- 7) Inspect major fabrication plants (those fabricating/assembling specific products for the project) to verify satisfactory procedures and quality control processes (regular plant quality control visits are not included)
- 8) Receive and manage quality documentation:
  - Subcontractor DIR/Logs
  - Quality reports from vendors
  - Quality reports from vendors for Owner-Directed Purchases.
  - Special Inspection reports
  - Material testing reports
  - DIR's generated by TAH technicians
  - Minutes of quality aspects of precons and periodic quality meetings
- 9) Prepare Monthly QC Summary Reports which analyze and assemble the prior month's activities enabling appropriate levels of management to be well informed on.



- Summary data on A/E issued deficiency notices and resolutions, QC notices of non-conformance, RFI statistics, Submittal statistics, Threshold Inspector's Log of non-conformance detailing new issues, resolved issues, pending issues and compliance schedule.
- Summary report of "proactive" QC activities (i.e. preconstruction meetings, quality expectation meetings, mockups, and subcontractor meetings).
- Report on upcoming month's activities and milestone events in the QC program.

Under this revised plan, TAHD's performance of these delegated responsibilities will be enhanced in three primary ways. First, we have integrated new people (from PACB's staff) to the functions performed by TAHD. Second, we have strengthened that staff with the addition of Chris James, who has structural expertise, and Deb Emser, who provides MEP expertise. Third, we have or will redesign report formats to allow much clearer communication of quality status and expectations. Fourth, we have streamlined processes and added staff to allow technicians to spend more than twice as much time in the field. All of this will enhance the performance of quality management functions.

#### *Subcontractor Quality Management*

Primary and continuous quality within the CM organization is inherently and necessarily vested in the subcontractors and material suppliers who are required to:

- 1) Identify a qualified individual who will assure each day's work is accomplished in accordance with document requirements.
- 2) Have a daily sign-off mechanism by this individual.
- 3) Have an in-house quality process.

- 4) Provide documentation of this process for materials provided.

None of this is materially different from the existing quality plan. What needs to happen is better execution, which will be accomplished in four primary ways.

- 1) The improved documentation process, particularly the daily sign-off process, will be much more closely utilized to assure performance of quality processes by the subcontractors.
- 2) Increased level of subcontractor monitoring through increased "field time" of QC technicians, as noted above.
- 3) PACB will initiate a "quality partnering process" designed to get subs to recommit to the highest level of quality performance.
- 4) It is axiomatic that incentives work better than penalties. To that end, PACB will initiate a quality incentive program, much like the effective safety incentive program, to celebrate and recognize especially noteworthy quality performance by subcontractors and suppliers.

#### **PACMO Responsibilities**

Very specific quality functions are vested with PACMO, which are performed either directly by PACMO or through CP&A. These responsibilities include:

- 1) A continuous process to provide quality documents, and timely answers to RFT's and, issue necessary changes.
- 2) Timely review and approval of submittals.
- 3) Intermittent architectural and engineering inspections.
- 4) Threshold inspections by the Threshold Building Special

Inspector to certify the structural elements of the building are properly constructed.

- 5) Specific materials testing by an independent laboratory.
- 6) Collaboration with PACB to assure quality requirements for Owner Direct Purchase Materials (ODP) are met. PACB cannot do this alone, as it does not have contractual privity with the ODP material providers.
- 7) Participate and collaborate on and with the Quality Incentive Program of rewards and recognition.

It is critical that the County correspondingly improve execution of its quality obligations. The key areas that will greatly assist quality improvement are:

- 1) Updated drawings that timely incorporate changes.
- 2) Timely threshold inspections and material testing. With full time inspectors assigned to this project, immediate inspections, when requested, will greatly aid subcontractors and facilitate a more collaborative and quality conscious work environment.
- 3) Early resolution of CORs. While not directly tied to quality, it is effectively impossible to engage subcontractors in higher levels of performance if they are financially impacted by lack of timely approval of and payment for legitimate changes.

**MEASURING  
SUCCESS**

One of the important and principal contributions of the Monthly Report is to develop specific metrics of quality success. This can take the form of (1) improving the timing and efficiency of inspections; (2) setting progressively higher standards for reducing deficiency notices, etc. and rewarding improved performance; (3) determining the most effective utilization of mockups; or (4) establishing standards for timely review of quality issues and resolution thereof. These are just illustrations. The objective should be to establish a set of metrics that can helpfully gauge quality and measure improved performance, so that a culture of quality pervades all aspects of the project.

**DETAILS**

This overview and the attached organization charts depict the principal features of the revised Quality Management Plan. Considerably more detail needs to be developed. The specific details to be developed are set forth in the attached Table of Contents. The Quality Team has met and agreed upon the key principles described herein. PACB shall prepare all the materials suggested in the Table of Contents and submit the detailed revised Quality Plan by October 10, 2003.

**WHAT IS  
DIFFERENT?**

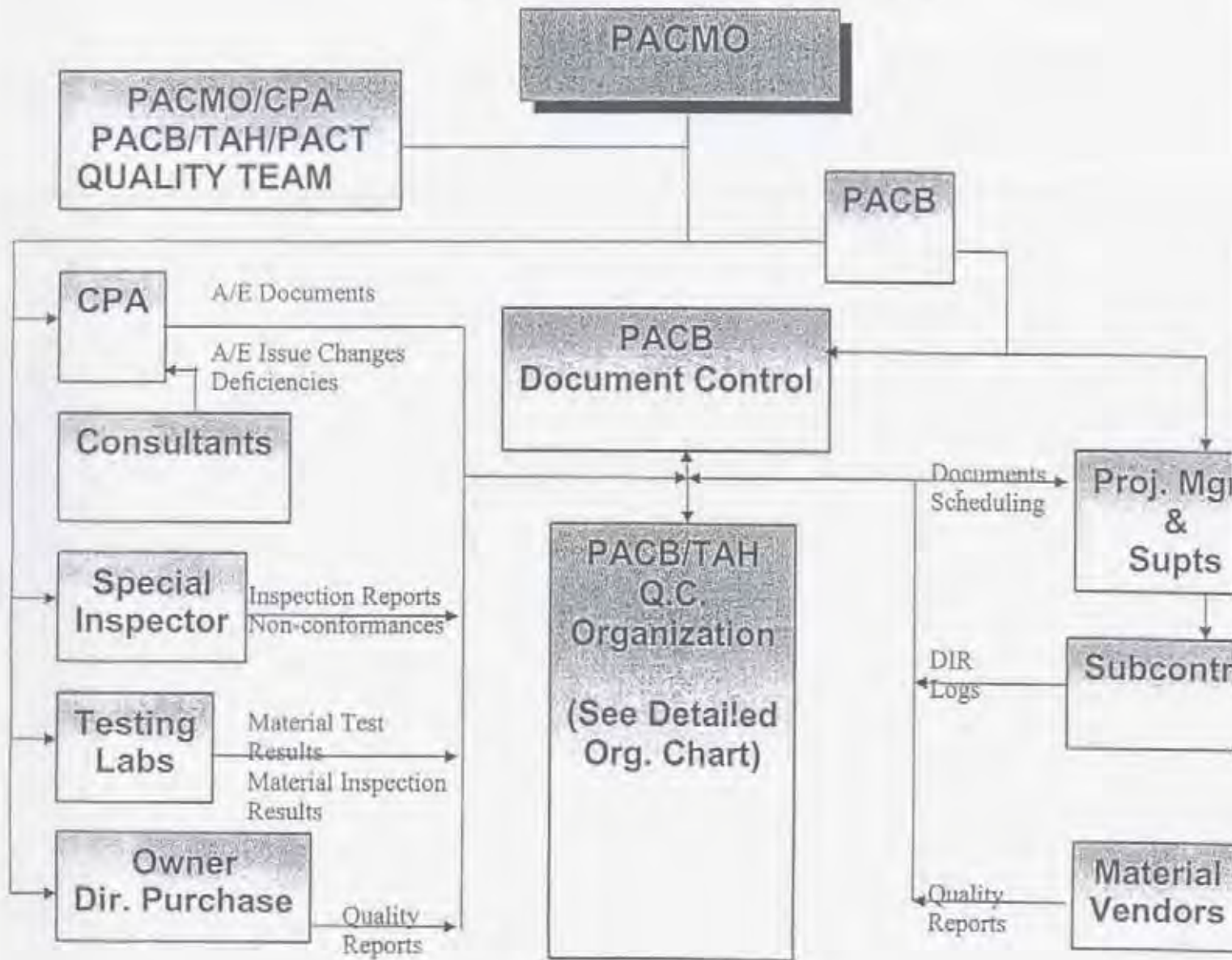
This revised Quality Plan improves upon the existing plan in several material ways. It:

1. Adds new people.
2. Strengthens the staff assigned to quality.
3. Provides greater oversight of quality activities by PACB and PACMO staff.
4. Establishes a new Quality Team to provide high-level oversight of quality.
5. Streamlines and vastly improves quality management reports.
6. Encourages proactive quality management
7. Improves communication
8. More effectively engages and monitors subcontractor performance
9. Adds a quality incentive program.

10. Promotes a more collaborative atmosphere.

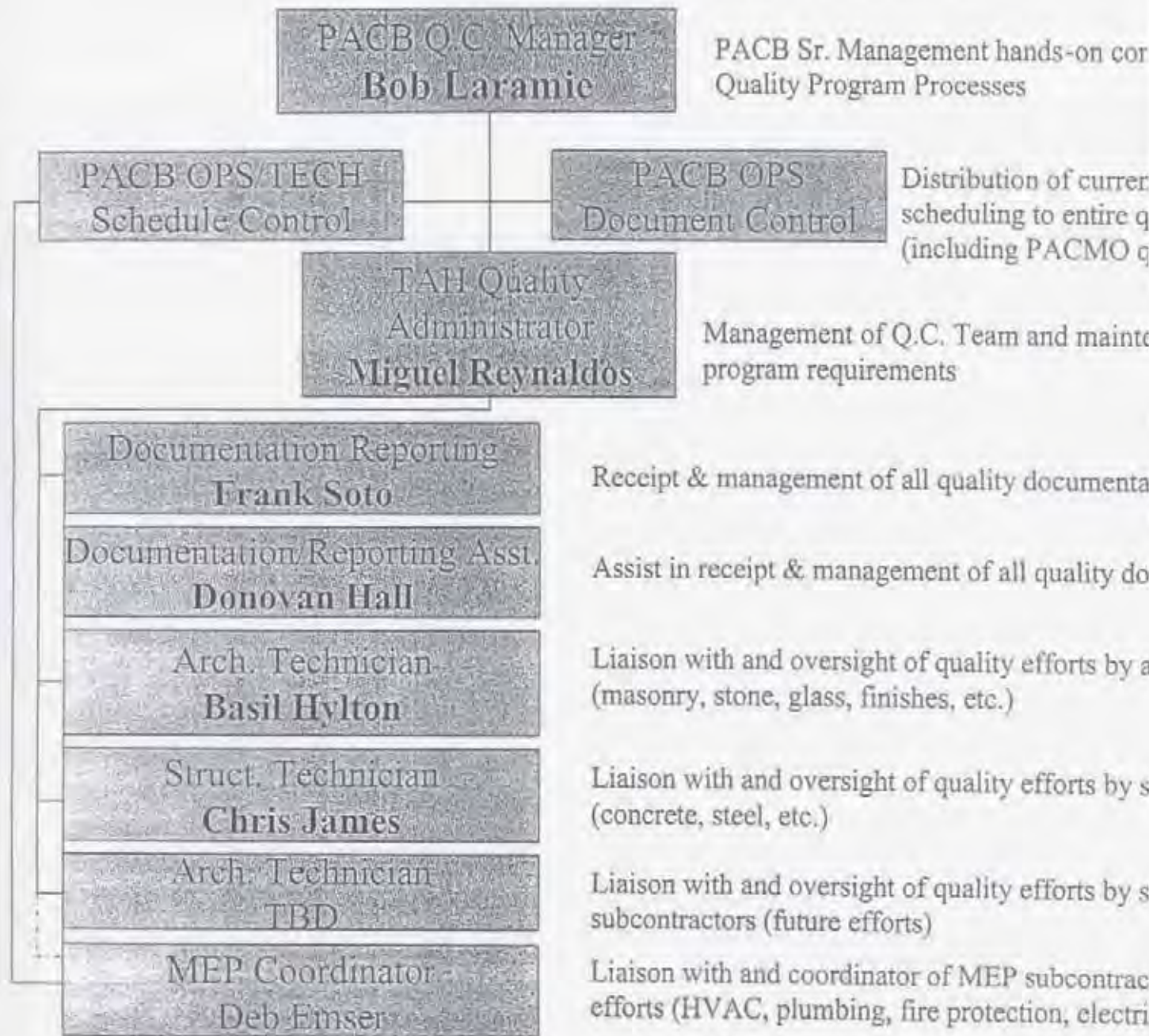
For all of these reasons, PACB submits this revised plan overview to the County and urges its immediate further development and adoption.

# OVERALL PROJECT QUALITY ORGANIZATION CHART



# PACB QUALITY TEAM

## Detailed Organization Chart



# PROJECT QUALITY CONTROL ORGANIZATION CHART

## DRAFT

