



**CITY OF GILROY – GILROY PUBLIC LIBRARY**  
**PROJECT REPORT #1: BASELINE ANALYSIS**

**DATE:** March 16, 2009  
**TO:** Thomas J. Haglund, City Administrator  
**FROM:** Harley Ellis Devereaux

We would like to begin by thanking the citizens of Gilroy for giving us the opportunity to assist in bringing this long-awaited project to fruition. Your perseverance in pursuit of this well-deserved goal has been an inspiration to us, and we remain deeply committed to the successful realization of your goals.

The project we (almost) completed in 2003 was the outcome of a lengthy evolutionary process, from wide ranging community brainstorming sessions to highly specialized detailing of complex building systems. The objective was to embody and document to the greatest extent possible the programmatic service goals established by and for your community of library users. The drawings and specifications we produced achieved that objective, within the cost parameters and code requirements that governed at the time.

We now find ourselves, six years later, with funds finally available to carry this project to completion. In order to proceed efficiently, with due diligence and transparency, we first need to understand how the governing parameters have evolved during the intervening years, and what new factors and opportunities have arisen. This report is the first step of several in gaining a clear understanding of how we can best proceed to both achieve the goals established in 2003 and take advantage of opportunities not available at that time.

### **Baseline Analysis**

In order to have a basis for decision-making going forward, we first need to establish a foundation by understanding how the existing project documentation has been affected by the passage of time. This “baseline” will give all stakeholders a common reference point, even though it will likely not match the project as finally constructed.

We have measured various aspects of the project as it existed in early 2003 against current versions of the critical governing parameters of cost, code compliance, programmatic goals, products and materials, building systems, site conditions, and project documentation.

For each parameter we give an overview of the changes that have taken place since 2003, we outline our assumptions and methodology, and we highlight significant impacts to the

project as it currently exists. Where possible, we have presented suggestions as to next steps needed to resolve any resulting uncertainties. Taken together, the various outcomes detailed in this Report #1 present a defined starting point for effective decision-making as the project moves through the future phases of sustainable design analysis, completion of revised construction documents, demolition of the existing library, and bidding and construction of the new library.

We have used the 90% Construction Documents, dated 3/14/03, and the 90% Opinion of Probable Cost, dated 2/24/03.

The following individual topics provide the detail on each specific aspect of the project baseline evaluation, in support of our Conclusions. At the end of this report, we provide a Timeline summary of next steps.

### **Building Code Analysis**

Building design was initiated prior to November 1, 2002 and thus complies with the requirements of the 1998 California Building Code. We have reviewed the design for conformance to the 2007 California Building Code, currently in effect, and have made the following findings:

1. **Occupancy classification** will remain as A3 (Assembly) and will require no revisions.
2. **Construction type** will change from type III NR to III B. The change in the code would allow a reduction in the exterior wall rating (from 4-hour wall minimum to 2-hour wall minimum). Given the current structural design of the building, we would not currently suggest any revisions in the exterior walls to match this change in allowable rating. Shaft enclosures will remain as one-hour construction.
3. **Building area** will remain within allowable area given the area increases permitted for frontage (distance to existing structures) and number of stories.
4. **Building height** will remain within current code limitations and will require no revisions.
5. **Exterior openings** dimensions and locations will remain within current code limitations and will require no revisions.
6. **Exits width** will remain within current code requirements and will necessitate no revisions.
7. **Restrooms** will remain within current code requirements and will necessitate no revisions.
8. **Stair #1** will require reconfiguration in order provide an area of refuge mandated by current code.
9. **Elevator hoist way** will require reconfiguration to meet dimensions per new manufacturer's cut sheets.

In summary, the building design is in substantial compliance with 2007 California Building Code and will require minor revisions to obtain plan check approval. These revisions should have minimal impact on program and baseline cost.

### **Architectural Findings**

This category discusses aspects of the project that impinge on multiple building systems and/or disciplines.

*Materials and Products (Specifications)* – most of the manufactured building components, materials, products, and finishes originally specified were generally available at the time of original design. As such, we believe equivalent products are available from today's building industry. However, it will be necessary to update manufacturers, catalog numbers, color names and numbers, etc. to produce currently biddable documents. This review will cover both drawings and specifications.

Custom fabrications, such as skylights, sunshades, trellises, roof screens, acoustic treatments, etc. are detailed on the drawings, and their overall design will not likely change. Their structural components and connections will have to be verified against current code requirements.

*Programmatic Goals* – our program advisors from the original project, Karen Nagy and Don Intersimone, are currently available to assist in moving the project forward to completion, should the City and Library so desire. They have reviewed the existing project in light of current standards, and have raised several issues for your consideration.

There have been many changes in available library media (print vs. non-print), as well as in the handling of library materials, since 2002. Increased use of self-checkout is one example. The use of reference materials (print vs. on-line) should also be revisited.

Assumptions about growth, both within collection formats and for overall capacity between collections should be reviewed.

You may also want to confirm or revise the service model as embodied in the current design, which could have impacts on layout, furnishings, and number and distribution of staff. Have user profiles changed? Is the relationship between circulated materials and in-library use of materials still the same? How are dedicated technology workstations used now? What are the assumptions about laptop use? Have assumptions changed about educational and literacy programs, group study and meeting spaces, or community usage? Are there new programs not reflected in the current baseline design?

Any of these considerations could result in related changes in the facility layout and design.

*FFE – Furniture, Fixtures, and Equipment* is a category of scope which varies from project to project. In general, FFE refers to movable items which are not permanently attached to the building and/or its systems, such as telephones, computers, furniture, vending machines, etc. These items would normally be provided under contracts separate from the contract for the construction of the building. However, some of them would require coordination of scheduling and installation with the on-going building construction project.

In the original design and cost estimate, we included library shelving, security gates, projector screens, lockers, whiteboards, built-in cabinets, a video/book depository, built-in cabinetwork, and a self-check station.

Computers for staff and public use, telephones, movable seating and tables, projectors, and vending machines were not included in the original design or cost, although electrical power was provided. Power and data requirements will have to be confirmed and updated where necessary.

We understand that technology and programmatic requirements related to security, audio/visual functionality, and materials handling have evolved since the original design was completed. Part of our scope of work in bringing the existing design up to date would include confirmation of this scope with library staff and likely some changes to building systems (such as electrical) and design (such as cabinetwork and layout) to accommodate today's requirements. The library shelving will need to be specified in detail; we would expect to work with library staff's recommendations to confirm manufacturer and detailed specifications for inclusion in the building bid documents.

Library furniture, other than shelving, will need to be confirmed as to program, scope and budget. It was shown in the original design in order to document compliance with Library Bond Act funding requirements, but it was not part of the project budget or bid documentation scope. Harley Ellis Devereaux now has a dedicated Interior Design group in-house, and we can provide the necessary design and documentation services to specify, procure, and even assist with installation of the furniture scope.

***Data/Telecom/Security*** – the IT infrastructure and server requirements should be reviewed in the context of revised library program requirements, new equipment specifications, and new technology (wireless technologies, for example). Data/Telecom rooms may need different HVAC services.

The existing security system design should be confirmed against current facility requirements. The technology for the Intrusion Detection and Access Control systems outlined in the 2002 design has evolved through several generations, and current program protocols need to be confirmed as accurately reflected in the design. Book and materials security products will also have to be re-specified.

### **Structural Findings**

The original Structural Engineer for this project, John A. Martin & Associates, is currently available to execute the structural scope required to bring this project to completion.

The baseline structural design was executed under the provisions of the 2001 California Building Code (CBC), which specified seismic performance requirements based on seismic zones as defined at the time. The current governing code is the 2007 California Building Code (CBC). This current code stipulates structural performance based on

seismic coefficients which are specific to the actual project site, and requires a performance analysis based on equations that did not exist in 2001. The coefficients for these equations are to be established by a geotechnical/soils report specific to the project site.

In order to perform these new calculations, a revised geotechnical/soils report has been commissioned by the City. The geotechnical consultant for the original project, Earth Systems Pacific of Hollister, is preparing the updated report. They believe the original report can be updated to provide the currently required site specific coefficients using data collected during their original investigation, without additional soil borings or other site work.

Once an updated geotechnical/soils report is available, the Structural Engineer will then be able to perform a new code-compliant baseline analysis of the existing building design. Until then, the exact nature of possible structural modifications is unknown. However, based on a qualitative review of the original drawings and calculations, it is likely that modifications to the lateral resisting system (shear walls, columns, and slabs) will be required. These modifications could be as minimal as revising the reinforcing steel, or they could require dimensional changes in the overall sizes of various components of the lateral resisting system.

As changes in the size or thickness of shear walls, columns, or floor slabs could impinge on programmatic area requirements, we see this structural analysis as a high priority task in the overall determination of building cost and configuration.

### **Mechanical Findings**

The project as designed met the code requirements of 2002; it will now have to comply with the 2007 code, including the more stringent current requirements for energy usage dictated by current Title 24 parameters. While this project represented an efficient approach to heating, ventilating, air conditioning, and water usage in 2002, a new Title 24 analysis must now be performed to calculate allowable energy consumption, and to determine specifically what degree of compliance the existing design represents relative to current standards.

All specified HVAC equipment and plumbing fixtures and equipment must be reviewed to determine whether the manufacturers and catalog numbers are still available, as well as for compliance of specified products with current code requirements. New equipment may have to be selected. This review process also applies to all temperature control systems. Many of these products have evolved quickly in the past several years, due to energy usage concerns, and several generations of product development have taken place over the past 7 years. While these changes may require extensive redesign, they should more than pay for themselves in lower future operating costs.

Changes in building code relative to atrium and open space design must be reviewed for their impact on smoke evacuation requirements.

Once the new energy consumption requirements of the project are confirmed, the tie-in points and capacities of utility services for all systems must be verified as adequate.

### **Electrical Findings**

The project as designed met the code requirements of 2002; it will now have to comply with the 2007 code, including the more stringent current requirements for energy usage dictated by current Title 24 parameters. When designed, the allowable energy usage was over 73,000 watts, and the building as designed only used approximately 53,000 watts; at the time this was a very efficient design. A new area analysis must now be performed to calculate allowable energy consumption, and to determine specifically what degree of compliance the existing design represents relative to current standards.

The current code requires a complete short circuit/coordination study be submitted for review as part of the permit approval process. This requirement did not exist in 2002; it is designed to demonstrate to the governing authority that the project is designed so that, under a short circuit condition, the system will not experience a catastrophic failure. This coordination has always been a part of best design practice, but the code now requires that it be illustrated with specific information added to the single line diagram.

Another current code requirement that did not exist in 2002 stipulates compliance with certain lighting levels for all egress lighting. This analysis may dictate changes in the amount and distribution of egress lighting, although it is also possible that simply replacing the originally specified egress lighting with equivalent currently available lighting may meet these requirements.

All specified lighting and power equipment must be reviewed to determine whether the manufacturers and catalog numbers are still available, as well as for compliance of specified products with current code requirements. New equipment may have to be selected. This review process also applies to all lighting control systems. All of these products have evolved quickly in the past several years, due to energy usage concerns, and several generations of product development have taken place over the past 7 years. More efficient lighting products, combined with more stringent code requirement, may dictate baseline changes in lighting quantity, layout, and overall design approach.

Once the new energy consumption requirements of the project are confirmed, the tie-in points and capacities of utility services for all systems must be verified as adequate.

### **Civil Findings**

We have contacted our consultant for the original project, Hanna & Brunetti, and they are available to complete the project with us. They have analyzed the original project against current conditions and requirements; there are several tasks they will need to complete in order for the project to be permitted for construction.

As Hanna Street was reconstructed in 2006-07, the existing topographic survey of the project site will need to be updated to present conditions. This will require a partial survey, and updating of the computer files, in order to confirm any scope requirements

related to changed drainage, grading, and accessibility conditions. The extent of changes necessary to accommodate current conditions will be determined by a comparison of the new survey with the original, as well as any changes in site improvements that may result from changes to the original project design.

This revised site survey will also be the basis for the Demolition Package construction documents.

Since 2003, any project that disturbs more than 1 acre must be reviewed and permitted by the Regional Water Quality Control Board. The Gilroy Library site, at 1.1 acres, will have to undergo this review, which includes preparing and submitting a Storm Water Pollution Prevention Plan (SWPPP) indicating how illicit discharges from construction activities will be prevented. With the SWPPP, the Board also requires an Erosion Control Plan, which will become part of the construction documents package.

In addition to drawing changes, the Specifications for Civil scope will have to be reviewed and updated to current City and industry standards. This will include providing current reference standards, manufacturer information, and incorporation of current City requirements and standards for utility installation and connection, related structures such as manholes, and subgrade and surface improvements.

### **Landscape Findings**

The irrigation plan needs to be updated to include the latest models of spray heads to create maximum efficiency. The irrigation plan also needs to be adjusted to include new water conserving techniques such as drip irrigation and others that will meet the current City standards.

The Planting Plan will require some minor adjustment to reflect current plant material availabilities and comply with current code requirements for lower water usage.

The Hardscape Plan will require minor adjustment updating some selected materials such as “Raja Red Slate” paving. In addition, manufacturers’ specifications and catalog references for site amenities (bike racks, benches, etc) will have to be reviewed and brought up to date.

The standard Landscape and Irrigation details will require some revision to meet current City standards.

### **Project Documentation**

The existing ACAD drawing files are in Version 2001. We are currently using ACAD 2007. Newer versions of the ACAD software are able to open earlier versions, as well as save the old files into the new version, so we should be able to share files with the various consultants on the project. Since our own merger in 2006, we have adopted new standards as to how we internally organize the layers and cross-references in our CAD files; we will decide whether we need to make such updates to the CAD files on this project once we have a full understanding of the final project scope.

### **Sustainable Design Considerations**

We understand that the City is interested in building a facility that addresses current concerns about sustainability, the environment and user comfort by requiring the design to be in conformance with LEED (Leadership in Energy and Environmental Design) principles.

LEED certification is administered by the U.S. Green Building Council (USGBC), a national organization that has developed a system to measure a building's "greenness". Over the last several years, LEED has become the national benchmark for sustainability. Four levels of LEED certification are available: Basic Certification, Silver, Gold and Platinum (in order of increasing sustainable qualities). To obtain any of these certifications, the project must be submitted to the USGBC for review. Credits are obtained by meeting a number of specific requirements outlined in a standard LEED Scorecard. The submittal includes this scorecard along with written and graphic supporting documentation.

The scope of this evaluation is to assess the baseline design's sustainable performance and its potential to achieve LEED certification. The analysis below is based on LEED's six major credit categories:

***Sustainable Sites*** - This category evaluates how the project makes use of the building site to promote sustainability. Principal considerations are the project's location (proximity to public transportation), features promoting alternative transportation, exterior materials, landscape and light pollution. Our review indicates that:

- Given the project's location within the City's Civic Center, we expect to find adjacent public transportation providing credits for this feature.
- Bicycle racks, when provided in conjunction with showering and changing facilities for staff use provide credit. Current design includes bicycle racks but no showers.
- Both concrete paving and roof tiles included in the design have appropriate sustainable characteristics that may provide credits for these features.
- Landscape design includes several shading species that can provide additional credits.

***Water Efficiency*** - This category evaluates how the project makes use of water resources to promote sustainability. Principal considerations are the project's landscape irrigation needs and interior plumbing fixtures. Our review indicates that:

- Use of more drought resistant species may be required to further reduce water usage for landscape irrigation.
- Recent advances in plumbing fixture design allow for further reduction in water usage. Use of waterless urinals provides additional reductions.

***Energy and Atmosphere*** - This category evaluates how the project makes use of energy resources and maximizes use of “earth friendly” refrigerants to promote sustainability. Principal considerations are the energy performance of the building systems (lighting, mechanical), commissioning, use of refrigerants and use of on-site renewable energy. Our review indicates that:

- The insulating qualities of the building envelope (exterior walls and roof) determine rate of heat gain or loss and impact energy usage. The current design includes appropriate levels of insulation as well as exposed concrete mass to the building’s interior. Exposed mass creates a “flywheel effect” moderating interior temperature swings and reducing energy usage. Insulation and thermal mass can contribute significantly to the energy performance of the building.
- Since mechanical equipment will require updating to current models, new equipment can be specified with appropriate “green” refrigerants.

***Materials and Resources*** - This category evaluates how the project makes use of building materials to promote sustainability. Principal considerations are construction waste management, use of regional materials, use of products with recyclable content, use of rapidly renewable materials and use of certified wood. Our review indicates that:

- Construction waste management has become a very typical practice in the building industry. The City of Gilroy has a recycling ordinance for Project specifications could establish minimum requirements to achieve LEED credits.
- Since products and materials will require update to current models, new materials and products can be specified with appropriate “green” characteristics (such as recyclable content) and from regional sources.
- Use of certified wood can be specified for casework and other wood assemblies.

***Indoor Environmental Quality*** - This category evaluates how the project makes use of building materials that promote occupants health. Principal considerations are construction indoor air quality, use of low emitting materials, thermal and lighting controls, access to daylight and views. Our review indicates that:

- Construction indoor air quality could be required by project specifications.
- Since products and materials will require update to current models, new materials and products can be specified with appropriate “green” characteristics (low airborne pollutants for paints, adhesives, sealants, carpets and wood composites).
- Design provides significant access to daylight and views. Calculations should be performed to confirm project will meet these LEED requirements.

***Innovation and Design Process*** - This category considers any additional measures utilized by the project to promote sustainability. Measures can include sustainability education outreach processes and green housekeeping. Opportunities to develop programs that support a sustainable agenda should be discussed and considered.

In conclusion, we find that the project as originally designed - and given the opportunities arising out of the need to update building systems - could successfully achieve Basic LEED Certification. Increased levels of certification are certainly possible and they would require additional analysis including cost/benefit evaluations to determine affordability and acceptable value. This detailed analysis will be the subject of our second project phase report.

### **Conclusions**

In early 2003 our firm completed a 90% Construction Documents package that embodied your programmatic and budgetary goals for a new Gilroy Library.

Our Base Line analysis shows, with the exception of certain parameters still to be confirmed which – based on our present knowledge – we would characterize as of minimal potential impact, that the City of Gilroy can build an equivalent facility today, without significant changes to building size, shape or internal organization. Under today's applicable codes, using today's equivalent systems, materials, and products, we believe it is reasonable to assume that this facility could be procured for a bid cost within the budget authorized by the voters of Gilroy.

While our next step in this process will be a detailed analysis of multiple levels of sustainable design options, we also believe that this baseline equivalent building would likely be able to achieve basic LEED certifications.

### **Project Timeline**

This report completes the first phase of the re-started project.

Our second planned milestone is a detailed presentation on sustainable design considerations and options, currently scheduled for the April 20, 2009 City Council meeting. To have accurate background information to inform this effort, we will need to complete new structural calculations to confirm the structural configuration of the building. We will also need to complete a Title 24 comparison of the existing design with current code parameters, as well as an energy model, and a day lighting analysis of the current design. This information will allow us to establish performance benchmarks for each level of LEED performance.

Simultaneously, we have presented a fee proposal for a demolition package for the existing library, with a goal to submit the necessary documentation for city plan check and approval in late April. The city is commissioning a Hazardous Materials report on the existing library facility, which we will include in the demolition package. This package – as well as the revised Construction Documents - will also include an updated site survey. The City will need to contract for the updated site survey by late March to meet the schedule for the demolition package.

We will also be submitting a copy of the current 90% CD package to the City for an internal staff review prior to beginning the third phase of the project.

Our third phase, between mid-April and mid-May, would consist of a series of meetings (probably 3 or 4) with City and Library staff to coordinate and compile the various changes and updates resulting from the processes outlined above. This phase will begin with a joint meeting of City staff, Library staff, and our project team on April 20. The outcome of this process would be documented in a written scope change statement, accompanied with an updated cost estimate.

Based on an agreed upon scope and project budget, we would then present, in early June, a proposal covering production of the updated construction documents and completion of the plan check and permit process for City review and approval. This proposal could also include our bidding and construction phase services if requested, although these services could be detailed separately at a later date, depending on the City's progress procuring project management and delivery services.

Pending timely approval, we would expect to submit the updated plans for City permit review and approval by October 1, 2009. With timely permit approval by the City, this would allow for bidding to be completed by the end of the year, and construction to start in March of 2010.