DRAFT
ARCHITECTURAL BUDGET COST MODEL

OF

5870-5874 ATLANTIC AVENUE
LONG BEACH, CALIFORNIA

FOR

THE CITY OF LONG BEACH
REDEVELOPMENT AGENCY

BUILDING
ANALYTICS
Building/Environmental Evaluations

File No. 110018
April 2010

DRAFT

BUILDING ANALYTICS
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April 7, 2010

File No.: 110018

Mr. Timothy Hou
The City of Long Beach Redevelopment Agency
333 W. Ocean Boulevard, 3rd Floor
Long Beach, California 90802

Reference: 5870-5874 Atlantic Avenue
Long Beach, California

Subject: Architectural Budget Cost Model

Dear Mr. Hou:

Attached is the Property Condition Assessment Report you requested, which represents our evaluation of the above referenced property. The purpose of the evaluation was to evaluate the existing construction to provide information as to the structural feasibility and estimated costs of converting the building into a library branch facility. Attention was given to local and state building code compliance, consideration of the useful life expectancy of major building components and the quality of construction.

If after reviewing this report you have any questions concerning our recommendations, I would appreciate the opportunity to discuss them with you.

Sincerely,
BUILDING ANALYTICS

Michael E. Williams, RA
President

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DRAFT

EXECUTIVE SUMMARY
Atlantic Theater /Hanson Building
5870-5784 Atlantic Avenue
Long Beach, California

On March 11, 2010, Building Analytics performed a physical condition survey of the property located at 5870 and 5874 Atlantic Avenue in Long Beach, California. The property, vacant since 2005, consists of a commercial building that was last occupied by a church and a furniture store. The building was originally constructed between 1941 and 1946 and encloses 28,529 square feet. Electrical power was not provided to the building at the time of the evaluation and flashlights had to be used to complete this assessment.

The property is located on the southeast corner of the intersection of Atlantic Avenue and 59th Street in the City of Long Beach. The surrounding properties are commercial to the south, single-family residences to the north across 59th Street and east with vacant lots across Atlantic Avenue to the west. Parking is provided in a paved parking lot just south of the building, accessible from Atlantic Avenue.

The site is rectangular in shape and consists of a reported area of 23,288 square feet (0.5346-acres). Storm water drainage is accomplished by sheet flow to the public sidewalks and into the municipal storm drain system.

The asphalt paving in the parking lot is in very poor condition. Resurfacing the parking lot with another layer of asphalt could be completed but based on the age of the paving, the very poor condition and the number of cracks in the asphalt a complete removable and replacement is highly recommended. There are 46 striped parking stalls including two accessible parking stalls.

Due to the urban nature of the property there is no on site landscaping.

There are two billboards plus one Sprint telecommunication antenna on site.

Reportedly the building was constructed in phases during the 1940's the elements of construction include and features wood-frame roof structures, cast-in-place concrete elements and frames with brick masonry infill at the perimeter walls, slab-on-grade first floors, and shallow concrete foundations. The second floor, mezzanine areas and roof structures are wood framed. For additional information see the attached Structural Seismic Feasibility Study; this study includes information regarding Life-Safety issues at the building.

Access to the roof was not available during the March 2010 site visit. The roofing system consists of a built-up membrane with mineral faced capsheet. During the March 2010 site visit numerous active roof leaks were observed throughout the building. In several locations the plaster ceilings have collapsed and mold was visible on wall and ceilings. The membrane is in poor condition and needs to be replaced.

The exterior wall finishes are painted and in fair to poor condition. The former church's exterior doors consist of two pairs of hinged doors that are in fair condition. The former furniture store exterior doors are part of an aluminum storefront system. Other exterior doors include hollow metal doors set in metal frames. One overhead door is provided on the north elevation. Double-hung aluminum frame windows and steel casement windows are provided. The windows are in poor condition.

The interior finishes in the former church common areas consist of vinyl or carpeted floors, painted lath and plaster walls and ceilings. The building has been vacant for five years and the finishes are in poor condition with vandalism observed throughout. The interior finishes in the former furniture store consist of commercial grade carpeting and painted lath and plaster walls and ceilings. The interior finishes in the former furniture store are in poor condition and need to be replaced. Wide spread damage of the ceiling and exterior walls from roof leaks was observed during the March 2010 site visit.

Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" and "commercial facilities" on the basis of disability. The building once rehabilitated should be accessible to the disabled. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Signage is missing at the two accessible parking stalls and one of the two stalls should be designated as van accessible. At the entrance there is metal fence that slides on a permanent rail that is affixed to the sidewalk. This rail prevents a person in a wheelchair from entering the building. This barrier should be removed.

The church common areas and the sanctuary are accessible to the public but the public restrooms do not comply with ADA and need to be modified. The church space is two stories in height and there is no elevator provided to access the second floor. The former furniture store is accessible from the street. The existing restrooms are not accessible and will need to be reconstructed to meet ADA requirements.

The mechanical system for the building has been vandalized and no longer useable. It consisted of three roof mounted packaged heat pump units that served the church. The units were manufactured by *Rheem* and provided approximately 3 to 5 tons of cooling each. The tags on the units were missing making a definitive identification impossible. The units are in poor condition and need to be replaced. The furniture store is not air conditioned. Two old evaporative coolers are mounted on the roof. These coolers are in very poor condition and need to be replaced. Two suspended unit heaters provide heat in the furniture store.

Electrical service is provided overhead by Southern California Edison (SCE) to electrical meters located in an electrical closet on the northeast corner of the building. The electrical service has been vandalized and needs to be replaced.

The building is not protected by an automatic fire sprinkler system. No fire extinguishers were observed at either the former church or the former furniture store. These should be provided per code at the building once it is rehabilitated.

It was reported that consideration may be given to the adaptive reuse of the existing building. This reuse would consider utilizing the building as a public library. There will be several obstacles to overcome in completing this task including the modernization/replacement of existing building systems to meet contemporary needs and energy standards and providing access to the disable as required by the Americans with Disabilities Act (ADA) and Title 24 of the California Code of Regulations, Chapter 5, Access to Public Buildings by Persons with Disabilities.

The attached detailed structural analysis shows that the existing building does not meet the Life-Safety provisions of ASCE 41-06 for an expected scenario earthquake, and significant structural strengthening of key structural components would be required to reduce the life-safety hazard.

Although it is considered structurally feasible to strengthen the existing building to satisfy Long Beach City ordinances, State of California Code of Regulations, and the *Life-Safety* provisions of ASCE 41-06, the resulting retrofit building would not meet current building code requirements for new construction and would have increased vulnerability to structural and non-structural earthquake damage compared to a similar, newly constructed building.

Stated another way, there is a low probability that the retrofit building would collapse during a code-level earthquake but a moderate to high probability that the building would sustain heavy structural damage on the order of 20 to 30 percent of the building's replacement value. The expected level of earthquake damage to the retrofit building could result in a lengthy building closure and possible ultimate building demolition. It is our opinion that the cost to retrofit the building to satisfy 2007 California Building Code requirements for newly constructed buildings, and to assure structural performance similar to a newly constructed building, would be cost prohibitive.

In addition the attached Feasibility Study Cost Plan has a preliminary budget to the reuse of the building that is 35 percent higher then we what have typically seen in new construction with out improvements required for a public library.

In conclusion the building is 63-years and has been vacant for the past five years. During its vacancy the property has received little maintenance and has been vandalized with components of the major building systems stripped from the building. Mold was observed in the building as a result of active roof leaks and will require abatement once the roof has been made watertight. While the building can be structurally retrofit in an attempt bring it in line with current codes it will never meet current safety standards and its performance during a seismic while improved may well result significant damage and closure of the building for a period of time.

Three options have been proposed for the development of the future North Long Beach Branch Library (NLBPL) these include; the construction of a new branch library, the adaptive reuse of the existing buildings, and a hybrid approach keeping some of the existing architectural character and integrating those elements into a new branch library.

In the development of all three programs it was understood that the final project will need to meet LEED Gold certification requirements.

As there are no design development drawings available for the construction of a new NLBPL the cost to construct a new library was based on *North Branch LBPL Preliminary Space Allocations dated February 16, 2010* and using architectural examples (photos of the Mark Twain Branch Library and Design Development Elevations of the MacArthur Park Branch Library) provided by the Long Beach Redevelopment Agency. The cost to construct a new NLBPL is estimated to be $8,711,000.

The cost for the adaptive reuse of the building was developed using Property Condition Assessment prepared by Building Analytics, the Structural/Seismic Feasibility and sketches prepared by MHP and as built architectural plans and sections prepared by As Built Services. Additionally information from the NLBPL Preliminary Space Allocations was also considered. The cost to construct the NLBPL using an adaptive reuse program is estimated to be $9,942,000.

The hybrid program is based on keeping elements of the existing building's architectural character and integrating those elements into a new branch library. In addition to the documents listed above the cost for this work also considered the Historic Americans Buildings Survey (HABS) prepared by PCR Services Corporation. This program considers the reuse of the theater's poured in place concrete façade and the rooftop tower. The choice was made to exclude the façade of the Hanson Building from the hybrid program as it has been altered over the years and has significant damage from exposure to storm water and the elements. The reconstruction of this façade will provide a safer and more cost effective approach. The cost to construct the NLBPL using the hybrid program is $9,121,000.

For a complete breakdown of the costs associated with these three programs see the attached Feasibility Study Cost Plan prepared by Davis Langdon dated March 24, 2010.

MHP
STRUCTURAL ENGINEERS

April 7, 2010

Mr. Michael Williams
Building Analytics
502 South Verdugo Drive, Suite 200
Burbank, CA 91502

Re: Structural Feasibility Study for Proposed Redevelopment of
5870-5874 Atlantic Avenue, Long Beach, CA 90805
MHP JN 10-0047-002 {Ref. MHP JN 08-0472-002}

Dear Mr. Williams:

At your request, MHP, Inc. conducted an updated structural feasibility study for the proposed redevelopment of the subject commercial building. A previous structural feasibility study report for this project was prepared for Building Analytics by MHP on February 4, 2008 (MHP JN 08-0472-002).

The existing development consists of a one story with mezzanine commercial building located on a flat site in Long Beach, California. The project was constructed in two phases: the Atlantic Theater building was constructed in 1941-1942 and the Hanson Building addition was constructed in 1945-1946.

The purpose of this updated study was to evaluate the existing construction and to determine the structural feasibility of converting the existing building into a new library branch office. Two redevelopment scenarios have been considered for the feasibility study: 1) Retain and structurally strengthen the existing structure to conform with current building code requirements for the new library use; and 2) Demolish all existing structural improvements, except for the historic front façade, marquee courtyard and steel tower spire, in preparation for the construction of a new 30,000-sf library structure. This study is to be used for general planning purposes and to establish rough construction cost estimates for the required structural revisions.

The following project documents were provided for our review:

- *Atlantic Theater Historic American Building Survey Report*, prepared by PCR Services of Santa Monica, dated January 2010.
- Scope of Work letter issued by the Long Beach City Redevelopment Agency, dated January 21, 2010.

Original construction documents for the existing building were not available for our review. Our description and assessment of the structural systems are based on our site observations and engineering knowledge of similarly constructed buildings.

DESCRIPTION OF EXISTING BUILDING

Foundations

The building is supported on conventional shallow concrete foundation systems with isolated spread footings below columns and continuous footings below bearing walls. The first floor level of each structure is a concrete slab-on-grade of unknown thickness or reinforcing.

Framing

The main church roof is a barrel-shaped structure comprised of sawn 1x straight wood sheathing spanning across regularly spaced sawn 2x wood rafters that frame between wood bowstring trusses. The trusses span east-west between a brick infilled concrete frame wall at the west face and brick masonry bearing wall at the east face. Regularly spaced sawn wood ceiling joists frame between the truss bottom chords. A conventionally framed gable roof extends westward from the south end of the barrel roof. The hip roof spans between the south brick infilled concrete frame wall and north concrete bearing wall. The 2nd floor structure occupying the south end of the church building is likely constructed with straight sawn wood sheathing spanning across regularly spaced sawn wood joists that frame between the perimeter brick/concrete bearing walls and interior wood-stud bearing walls. Three individual roof structures comprise the retail store portion; two barrel-shaped wood roofs and a flat wood roof. The barrel-shaped roof structures are framed similarly to the church's barrel roof. The retail barrel roof structures extend between the west perimeter storefront wall and the east interior (original west church exterior) brick infilled concrete frame wall. The flat roof area is conventionally framed with sawn 1x sheathing spanning across regularly spaced sawn 2x wood rafters that extend between north and south concrete bearing walls.

The 2nd floor structure set below the flat retail roof is likely constructed with straight sawn wood sheathing spanning across regularly spaced sawn wood joists that frame between interior wood beams and the north and south concrete bearing walls.

Lateral Force Resisting System

Lateral wind and earthquake forces acting on the building are resisted by the straight-laid, wood roof and floor sheathing, which act as diaphragms, or deep horizontal beams, spanning between the vertical, lateral force resisting systems. The vertical, lateral force resisting systems consist of brick infilled concrete frame walls set at the north, east, south and west faces of the original church structure, reinforced concrete shear walls set at the north, east and south faces of the retail structure, and a concrete frame set at the open west face of the retail structure. The shear walls and concrete frames transmit the lateral forces to the concrete foundations.

EXISTING STRUCTURAL CONDITIONS

Site observations were conducted by Mr. Brad Ferris, S.E. on November 4, 2008 and March 3, 2010. Most structural elements within the building were covered by architectural finishes and could not be observed. Where observed, the as-built framing appeared to be typical of 1940's era commercial building construction. The building appeared to be in overall fair structural condition with no evidence of previous earthquake damage or foundation settlement.

The building has been vacant for over a year and maintenance of the waterproof envelope has not been completed for some time. There is evidence of widespread water leaks through the roofing membrane and window systems. The water intrusion has resulted in significant distress to the plaster wall and ceiling finishes and undoubtedly has caused damage to the underlying structural elements. The extent of structural damage is unknown and cannot be determined without removal of the deteriorated wall and ceiling finishes and roofing membrane. If it is desired to retain and restore the existing structure for a new use, identification and remediation of water intrusion related structural deficiencies should be planned for. The construction cost to address underlying structural damage could be significant.

SITE SEISMIC HAZARDS

Design Basis Ground Motion

The design spectral response accelerations used for new design in the 2007 CBC are derived from the Maximum Considered Earthquake (MCE) event, having a return period of 2,475-years. The Seismic Site Coefficients (F_a and F_v), defined by the 2007 CBC considering the site classification and mapped spectral response accelerations (S_S and S_1), are used to adjust the mapped spectral accelerations (which are based on an assumed site classification of B) to represent those reflective of the specific building site. The MCE spectral response accelerations (S_S and S_1), site coefficients (F_a and F_v), and design spectral response accelerations (S_{DS} and S_{D1}) which would be required by the 2007 CBC for design of a new building on the subject site are summarized in the following Table:

2007 CBC DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS						
S_S	S_1	Site Class	F_a	F_v	S_{DS}	S_{D1}
1.82g	0.71g	D*	1.00	1.50	1.21g	0.71g

*Regional geologic maps and reports indicate the subsoils at the site consist of Holocene (recent) alluvium. This soil profile is consistent with Site Class D per the 2007 CBC.

Regional Earthquake Fault Hazard

Based on published geologic reports and maps, strong ground shaking may affect the site as the result of earthquakes likely to occur on the following regional faults:

REGIONAL FAULTS			
Fault or Fault Zone	Distance and Direction From Site	Recent Activity	Maximum Magnitude
Newport-Inglewood (A)	1.5 miles SW	1933 M6.3	6.9
Palos Verdes (A)	8 mile SW	--	7.1
Whittier (A)	13 miles NE	1987 M5.9	6.8
Raymond (A)	18 miles N	--	6.5
Hollywood (A)	18 miles NW	--	6.5
San Andreas (A)	44 miles NE	1857 M7.8	7.8

Active (A) or Potentially-Active (PA) Fault

Significant recent earthquakes in the vicinity of the site include the 1933 M6.4 Long Beach earthquake (0.20g estimated site ground acceleration), the 1941 M5.4 Torrance-Gardena earthquake (0.20g), the 1987 M5.9 Whittier Narrows earthquake (0.15g), and the 1994 M6.7 Northridge earthquake (0.10g). It is considered unlikely that the building sustained significant structural damage from previous earthquakes.

Fault Rupture Hazard

California Earthquake Fault Zones (EFZs), established by the State of California under the Alquist-Priolo Earthquake Fault Zoning Act of 1973, are delineated around known surface traces of active faults. In accordance with State law, cities and counties must withhold development permits for new construction used for human occupancy and for extensive additions to or remodeling of existing structures until geologic investigations demonstrate that the proposed construction is not threatened by surface displacement from future faulting. If an active fault is found, a structure cannot be placed over the trace of the fault and must be set back from the fault (generally 50 feet). In addition, the effects of surface faulting are considered when estimating the degree of earthquake-related damage for existing structures located within the fault or drag zone.

The nearest mapped active or potentially-active fault is the active Newport-Inglewood Fault at a distance of 1.5 miles southwest of the site. The site is not located within a California Earthquake Fault Zone (nearest EFZ is on the Newport-Inglewood Fault). Since no active or potentially active faults are known to cross the site, **the potential for ground surface rupture due to recognized faulting is considered to be low**.

Soil Liquefaction and Landslide Hazard

Seismically-induced soil settlement and liquefaction (loss of soil strength in saturated soil deposits during strong ground shaking), and slope failure (landslides or local failures triggered by earthquakes) may affect soils supporting foundations. The effects of these other earthquake hazards can lead to loss of bearing capacity and excessive settlement of foundations, resulting in increased seismic-related building damage. In California, Seismic Hazard Zone (SHZ) maps have been issued by the State Department of Conservation for some major urban areas showing areas prone to liquefaction and landslides. These maps show areas where investigations are required for liquefaction and landslide hazards before development and construction permits can be obtained.

Regional geologic maps indicate subsoils at the site consist of Holocene alluvium with groundwater at a depth of approximately 30 feet. The site is located within a California SHZ for liquefaction hazards (Long Beach Quadrangle official map released March 25, 1999). Additionally, regional hazard maps indicate the site borders a liquefaction hazard area. Based on this information, **the seismically-induced liquefaction potential at the site is considered low to moderate**.

The site consists of level ground with no adjacent slopes above or below the site; thus, **the potential for earthquake-induced landslide or slope stability failure is low**.

FEASABILITY STUDY {REDEVELOPMENT SCENARIO 1}

The Scenario 1 feasibility study was completed to evaluate the project building's ability to meet a *Life-Safety* level of performance as defined by ASCE 41-06 *Seismic Rehabilitation of Existing Buildings* for the designated earthquake hazard level. Retrofit schemes were developed for any structural elements found not to be in compliance with the Life-Safety performance requirement.

The earthquake ground motion used for this evaluation is established in accordance with the requirements of ASCE 41-06 and is based upon an earthquake event having a probability of exceedance of 10 percent in a 50-year exposure period (equivalent to an average return period of 475 years). The analysis utilized linear static procedures that incorporate general engineering principals. In the linear static procedure, hand calculations are used to determine the magnitude of earthquake forces on individual structural elements within the building to investigate the elements capacity to resist those forces. The calculated elastic demand (D) for each element is compared to the element's capacity (C), which is defined as the elastic strength at yielding. The capacity of those members capable of inelastic behavior is multiplied by a component modification factor to account for permissible deformations beyond the yield state. These modification factors are referred to as *m*-factors. Acceptable *m*-factors for various component actions are defined in ACSE 41-06 and vary depending on the level of evaluation performance desired. Acceptable element performance is achieved when the element capacity multiplied by the appropriate m-factor is greater than or equal to the seismic force demand.

Based upon the results of the ASCE 41-06 analysis, the predicted structural performance of the existing structure ***does not* satisfy all provisions for *Life-Safety***. Seismic strengthening of multiple critical structural elements would be required to reduce the life-safety hazards associated with the building. To bring the building to a *Life-Safety* performance level, the following strengthening measures would be required:

- Strengthen the existing wood roof and floor diaphragms with plywood sheathing over the existing straight and diagonal sheathing. Localized strengthening of the existing wood rafters, joists, beams and trusses may be required to account for the added weight of the plywood sheathing.
- Anchorage of the heavy concrete and brick masonry walls is accomplished with wood ledgers that are bolted to the inside face of the walls. The ledgers act in cross-grain bending to transmit the out-of-plane anchorage forces from the walls to the 1x roof sheathing, which is nailed to the tops of the ledgers. This anchorage system presents a significant life-safety hazard and has not been permitted since the adoption of the 1973 UBC.

  New wall anchorage systems are required at all reinforced concrete and brick walls. New wall anchorage would consist of steel holdown or strap type hardware bolted to new and/or existing wood framing and connected with through bolts to the existing concrete and brick masonry walls. Additionally, new steel strap sub-diaphragm ties are required to transfer the wall anchorage forces into the diaphragm.

- The west façade of the retail store features a series of large storefront windows set between narrow concrete columns or piers. This type of construction is considered relatively flexible and is vulnerable to significant in-plane lateral displacement during strong seismic shaking. The open elevation will require strengthening via the installation of two, single-bay steel moment-resisting or braced frames. The frames will require new foundation elements and diaphragm drag beams. Temporary shoring of the existing roof framing would be required for installation of the new frames.
- The main church roof has a large diaphragm aspect ratio in the east/west direction, which results in large diaphragm seismic shear forces. To reduce the diaphragm shear force, a new drag element near the midpoint of the diaphragm will be required. The drag element would consist of a plywood sheathed wood stud shear wall constructed between the existing roof rafters and a new low steel roof beam. The steel beam will tie into a new concrete parapet constructed on top of the existing transverse concrete shear wall located to the west of the diaphragm. The existing shear wall will distribute the lateral forces to the existing concrete foundations.
- The south second floor structure appears to have limited lateral force resisting elements along the north elevation. A new plywood shear wall will be required at the open north elevation. The shear wall can be installed on existing foundations. Steel holdown hardware anchored into the existing foundations with threaded rods set in epoxy will be required at each end of the wall to resist overturning forces.
- The barrel-shaped roof structures are constructed using long-span fabricated wood trusses. As these truss assemblies age, local stress concentrations in the truss chords, webs, and connections caused by knots, bolt holes, and loaded end and edge conditions can cause sudden failure. The degree of risk is influenced by the age of the assemblies and the conservatism of the original design and construction. This situation can be further aggravated when added loads associated with mechanical or tenant improvement systems are added to the roof structure.

  The existing trusses will require strengthening. Strengthening measures would include the addition of two post-tensioned steel rods along side the bottom chord of each truss. The rods are designed to act as tension members in the event that the vulnerable truss bottom tension chords fail. Attachment of the rods to the trusses would consist of steel brackets bolted to each side of the truss chord. Approximately six trusses have previously been strengthened. The existing rods and brackets should be replaced to account for increased roof dead loads and seismic wall anchorage forces.
- The analysis of the brick infill concrete frames was completed based on the assumption that the walls were designed and constructed to meet minimum code-level requirements in effect at the time of construction. The shear strength of each wall was determined using the tabulated shear capacities defined in ASCE 41-06. The walls appeared to meet the *Life-Safety* level of performance when analyzed as shear walls; therefore, seismic strengthening of these elements is not considered necessary. However, in-place shear testing and confirmation of reinforcing will need to be completed to verify design assumptions used in our analysis. Unsatisfactory test results would warrant strengthening

which could take the form of casting new shotcrete walls and/or adding new shear connector plates between the concrete frames and brick infill.

- There is evidence of light to moderate rust corrosion of the steel framed tower. Of particular concern are rusted base plate connections which may have sustained a loss of strength capacity. Structural rehabilitation of the steeple structure is likely warranted. Rehabilitation work will include cleaning and protecting structural steel elements and completing localized member replacement or repair. Additionally, new base connections will likely be required at each leg of the steeple (6 total). Each new base connection will consist of a steel base plate that is welded to the existing steeple column and anchored to the existing concrete platform with new threaded rods set in epoxy. The rehabilitation work will require the removal and replacement of the existing sheet metal steeple cladding in order to gain access to the concealed structural members.

  Documentation of the existing tower framing and evaluation of its ability to withstand design seismic forces will be required. Further structural strengthening may be required if the tower frame is found to be deficient.

- The existing ceilings are constructed with plaster over regularly spaced wood ceiling joists. The heavy plaster ceilings add a significant weight to the overall building mass. While not required, removal of the existing plaster ceilings and replacement with lightweight materials would reduce the overall building weight and resulting seismic design force.

Summary of Findings

As detailed above, the analysis shows that the existing building ***does not*** **meet the *Life-Safety*** provisions of ASCE 41-06, and significant structural strengthening of key structural components would be required to reduce the life-safety hazard.

Schematic structural plans and details (Sheets SK1 through SK8) of the proposed seismic strengthening are attached to this report as Appendix B. These plans and details are preliminary and are developed in sufficient detail only for rough order-of-magnitude cost estimating; they are not meant to be a complete package for construction purposes. Refinement of the structural design and additional structural detailing will be required to produce construction drawings. Development of the final seismic strengthening design concept will require destructive testing of the building materials to determine actual material properties and to uncover hidden conditions.

It should be noted that the attached plans and details do not include structural modifications that may be required to accommodate tenant improvement work required to convert the building use into a library branch office.

Although it is considered structurally feasible to strengthen the existing building to satisfy Long Beach City ordinances, State of California Code of Regulations, and the *Life-Safety* provisions of ASCE 41-06, the resulting retrofit building would not meet current building code (2007 California Building Code) requirements for new construction and would have increased vulnerability to structural and non-structural earthquake damage compared to a similar, newly

constructed building. Stated another way, there is a low probability that the retrofit building would collapse during a code-level earthquake but a moderate to high probability that the retrofit building would sustain heavy structural damage – on the order of 20 to 30 percent of the building replacement value. The expected level of earthquake damage to the retrofit building could result in a lengthy building closure and possible ultimate building demolition. It is our opinion that the cost to retrofit the building to satisfy 2007 California Building Code requirements for newly constructed buildings, and to assure structural performance similar to a newly constructed building, would be cost prohibitive.

FEASABILITY STUDY {REDEVELOPMENT SCENARIO 2}

The Scenario 2 feasibility study was completed to evaluate the structural implications of retaining the existing front (Atlantic Avenue) façade, marquee courtyard, and steel tower spire while the remaining building structure is demolished and a new 30,000-sf library branch building is constructed and integrated with the saved structural elements.

Based upon our review of the existing construction, it is our opinion that it is feasible to retain the existing concrete wall and supporting foundation, marquee courtyard and steel tower spire at the south end of the west exterior elevation. The following structural concerns will need to be addressed during demolition of the existing building and construction of the new structure:

- Installation of temporary steel pipe shoring will be necessary to provide out-of-plane bracing for the remaining concrete wall when the existing roof and second floor structures are demolished. The top of the pipe shoring will be bolted to the remaining concrete walls and the bottom bolted to new concrete foundation elements. The shoring can be removed after the new supporting roof structure is completed.
- Structural strengthening of the remaining concrete walls and concrete foundations likely will not be required. To provide structural stability, the new roof and floor structures will need to be positively anchored to the existing wall in conformance with current California Building Code seismic design requirements. Existing wall cracks, spalls, and loose deteriorated concrete should be identified and repaired with structural epoxy during the construction process.
- There is evidence of light to moderate rust corrosion of the steel framed tower. Of particular concern are rusted base plate connections which may have sustained a loss of strength capacity. Structural rehabilitation of the steeple structure is likely warranted. Rehabilitation work will include cleaning and protecting structural steel elements and completing localized member replacement or repair. Additionally, new base connections will likely be required at each leg of the steeple (6 total). Each new base connection will consist of a steel base plate that is welded to the existing steeple column and anchored to the existing concrete platform with new threaded rods set in epoxy. The rehabilitation work will require the removal and replacement of the existing sheet metal steeple cladding in order to gain access to the concealed structural members.

  Documentation of the existing tower framing and evaluation of its ability to withstand design seismic forces will be required. Further structural strengthening may be required if the tower frame is found to be deficient.

Schematic structural plans and details (Sheets SK1(2) through SK8(2)) of the above required structural shoring and strengthening are attached to this report as Appendix C. These plans and details are preliminary and are developed in sufficient detail only for rough order-of-magnitude cost estimating; they are not meant to be a complete package for construction purposes. Refinement of the structural design and additional structural detailing will be required to produce construction drawings. Development of the final seismic strengthening

design concept will require destructive testing of the building materials to determine actual material properties and to uncover hidden conditions.

It should be noted that the attached plans and details do not include structural modifications that may be required to accommodate tenant improvement work required to convert the building use into a library branch office.

LIMITATIONS

The structural evaluation was performed by MHP, Inc. on behalf of Building Analytics for the purpose of evaluating the structural feasibility of converting the existing building into a library branch office.

The site survey was based on limited inspection of interior and exterior areas, a review of available documents, and a review of information provided by the representatives of the property owner. Physical testing was not performed and is considered outside the scope of this assignment. Intrusive testing was neither authorized nor performed.

The scope of work for the property review was based on standards developed and outlined by MHP, Inc. Differences, problems, and/or code violations were noted where observed; however, it is possible that areas containing deficiencies, physical inadequacies, or code and other regulatory violations may be present but were not observable at the time of the inspection. The recommendations and cost estimates provided in the report are intended to serve as general guidelines to be used in future repair, maintenance, and capital improvement decisions. The implementation of any recommendations will require specific details and specifications to be prepared by a licensed engineer or architect. Detailed cost estimates can be made based on the specific details.

The information and estimates of cost presented in this report have been developed in accordance with the above limitations, using that degree of professional care and skill ordinarily exercised under similar circumstances by engineers using the standards of practice and care normally exercised in the design and evaluation of investment-grade buildings in the local marketplace. No other warranty, express or implied, is made.

This report is subject to the limitations set forth above and is for the exclusive use of Building Analytics and their client. Use by others is authorized only after acknowledging and accepting the limitations stated and upon the express written permission of MHP, Inc.

By:

DRAFT

Brad E. Ferris, S.E., CA S4640
Partner

APPENDIX A
PHOTOGRAPHS

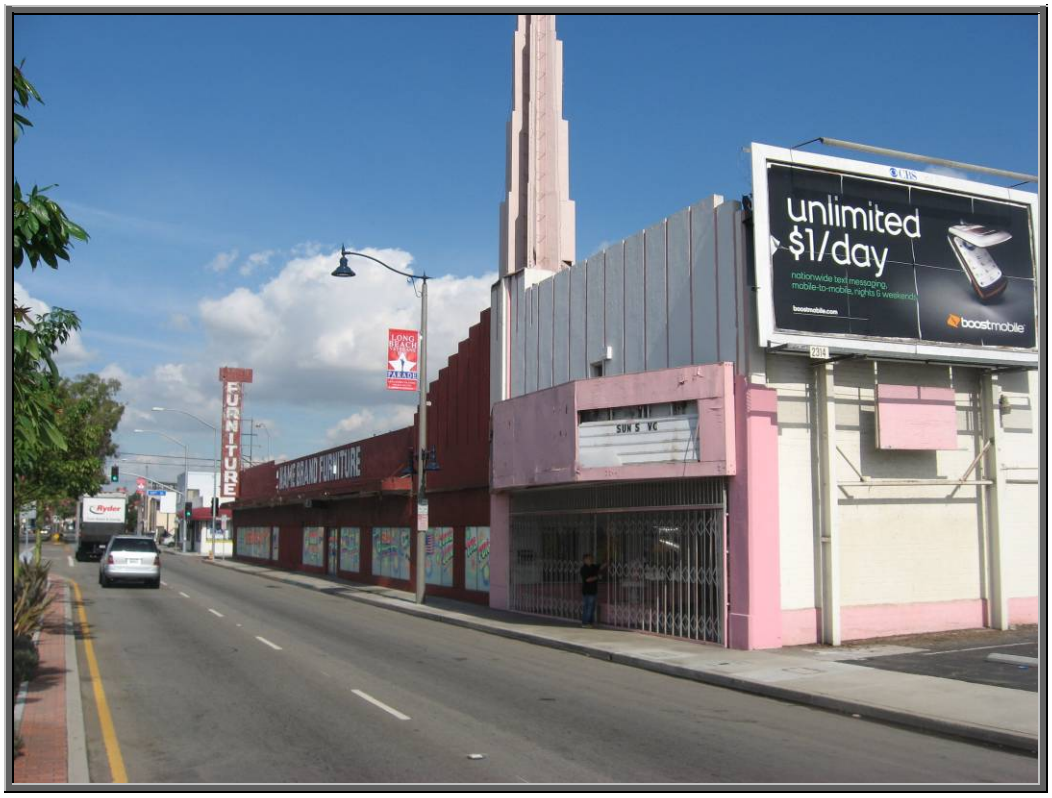

Photo 1: *West (Storefront elevation).*

Photo 2: *Brick infilled concrete frame at south elevation.*

Photo 3: *Roof overview.*

Photo 4: *Typical diagonal roof sheathing.*

Photo 5: *Typical strengthened bowstring truss.*

Photo 6: *Typical plaster ceiling framing.*

Photo 7: *Water damage at interior face of west Hanson Building storefront.*

Photo 8: *Water damaged plaster ceiling over theater floor.*

Photo 9: *Water damaged plaster ceiling over Hansen Building floor.*

Photo 10: *Steel tower spire founded on concrete podium.*

APPENDIX B
STRUCTURAL SKETCHES
[REDEVELOPMENT SCENARIO 1]

APPENDIX C
STRUCTURAL SKETCHES
[REDEVELOPMENT SCENARIO 2]

FEASIBILITY STUDY
COST PLAN

for

Atlantic Avenue Feasibility Study
The City of Long Beach Redevelopment Agency
Long Beach, California

DAVIS LANGDON

March 24, 2010

FEASIBILITY STUDY COST PLAN

for

Atlantic Avenue Feasibility Study
The City of Long Beach Redevelopment Agency
Long Beach, California

Building Analytics
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Burbank, California 91502

Tel: (818) 841-2575
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March 24, 2010

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CONTENTS

BASIS OF COST PLAN

Cost Plan Prepared From	Dated	Received
Drawings issued for		
Architectural		
Existing plans and sections (A101 - A103, A301)	Undated	12/01/08
Structural		
SK1 - SK8	11/26/08	12/09/08
Property Condition Assessment Report	Dec 2008	12/01/08
StructuralSeismic Feasibility Study	12/02/08	12/09/08

Discussions with the Project Architect and Engineers

Conditions of Construction

The pricing is based on the following general conditions of construction

The general contract will be competitively bid with qualified general and main subcontractors

There will not be small business set aside requirements

The contractor will be required to pay prevailing wages

There are no phasing requirements

The general contractor will have full access to the site during normal working hours

INCLUSIONS

The project consists of a feasibility study for three options for a new branch library for the City of Long Beach.

Option 1 identifies approximate construction costs associated with adaptive reuse of the existing unoccupied building based on the following documents and planning assumptions:

1. Property assessment report prepared by Building Analytics which identifies existing building and site conditions and deficiencies.

2. Structural/seismic report prepared by MHP Structural Engineers which identifies required structural improvements to the existing structure to meet current seismic code requirements.

3. Cost planning assumptions prepared by Davis Langdon for building systems applicable to typical library buildings relative to function and quality.

It should be noted that for cost planning purposes it has been assumed that the existing building configuration will remain unchanged relative to first and second floor space, all interior spaces will be gutted and completely renovated with new partitions and doors, finishes, fixed building accessories and equipment, MEP and fire sprinkler systems, and a new elevator will be added for second floor access. The existing exterior facades will be refinished and new windows and doors will be provided, The roof will be replaced with a new membrane roof and rigid insulation. An allowance is also included for LEED gold design criteria.

The cost report excludes potential additional construction costs associated with the following items which should be verified from a risk management standpoint since they would impact the overall required level of funding needed :

1. Additional building floor area beyond the existing 28,529 gross square feet.
2. Structural work based on change-of-use (ie floor strengthening for library shelving loads).
3. Site improvements beyond adjacent parking lot (ie development of vacant lot behind building)
4. Work to existing sidewalks.

In addition to the items above, typical project soft costs as identified on page 4 will need to be included in the overall project budget, together with allowances for potential cost escalation to start of construction date.

Option 2 identifies approximate construction costs for a new library building on the same site, and includes costs associated with demolition of the existing building.

Option 3 identifies approximate construction costs for a new library building on the same site, with the existing front wall and spire/tower elements being retained and incorporated into the new building design. All other parts of the existing building will be demolished.

INCLUSIONS

BIDDING PROCESS - MARKET CONDITIONS

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other work not covered in the drawings or specifications, as stated within this document. Unit rates have been obtained from historical records and/or discussion with contractors. The unit rates reflect current bid costs in the area. All unit rates relevant to subcontractor work include the subcontractors overhead and profit unless otherwise stated. The mark-ups cover the costs of field overhead, home office overhead and profit and range from 15% to 25% of the cost for a particular item of work.

Pricing reflects probable construction costs obtainable in the project locality on the date of this statement of probable costs. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors and general contractors, with a minimum of 3 bidders for all items of subcontracted work and 6-8 general contractor bids. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Davis Langdon has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, the statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents Davis Langdon's best judgement as professional construction consultant familiar with the construction industry. However, Davis Langdon cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

EXCLUSIONS

Design, testing, inspection or construction management fees

Architectural and design fees

Scope change and post contract contingencies

Assessments, taxes, finance, legal and development charges

Environmental impact mitigation

Builder's risk, project wrap-up and other owner provided insurance program

Land and easement acquisition

Cost escalation

Owner supplied and installed furniture, fixtures and equipment

Loose furniture and equipment except as specifically identified

Telephone and data cabling and equipment

Security equipment and devices

Audio visual equipment

Hazardous material handling, disposal and abatement

Compression of schedule, premium or shift work, and restrictions on the contractor's working hours

Library shelving

Increases in building floor area

Work to vacant lot behind building

LEED Certification

COMPARISON SUMMARY

	$x1,000
Existing Building Adaptive Reuse	9,942
New Building	8,711
Hybrid New Building	9,121

Please refer to the Inclusions and Exclusions sections of this report

ADAPTIVE REUSE OVERALL SUMMARY

	Gross Floor Area	$ / SF	$x1,000
Existing Building Adaptive Reuse	28,529 SF	315.18	8,992
Sitework			476
LEED Gold Allowance @ 5%			473
TOTAL Building & Sitework Construction	*March 2010*		*9,942*

Please refer to the Inclusions and Exclusions sections of this report

EXISTING BUILDING ADAPTIVE REUSE AREAS & CONTROL QUANTITIES

Areas

	SF	SF	SF
Enclosed Areas			
Existing Building Adaptive Reuse	28,529		
SUBTOTAL, Enclosed Area		28,529	
Covered area			
SUBTOTAL, Covered Area @ ½ Value			
TOTAL GROSS FLOOR AREA			28,529

Control Quantities

				Ratio to Gross Area
Number of stories (x1,000)		2	EA	0.070
Gross Area		28,529	SF	1.000
Enclosed Area		28,529	SF	1.000
Footprint Area		21,180	SF	0.742
Gross Wall Area		19,290	SF	0.676
Finished Wall Area		19,290	SF	0.676
Windows or Glazing Area	75.00%	14,468	SF	0.507
Roof Area - Total		21,180	SF	0.742
Finished Area		28,529	SF	1.000
Elevators (x10,000)		1	EA	0.351
Total Site Area		41,688	SF	1.461
Finished Site Areas		20,508	SF	0.719

EXISTING BUILDING ADAPTIVE REUSE COMPONENT SUMMARY

Gross Area: 28,529 SF

		$/SF	$x1,000
1. Foundations		8.03	229
2. Vertical Structure		11.46	327
3. Floor & Roof Structures		24.64	703
4. Exterior Cladding		47.06	1,343
5. Roofing, Waterproofing & Skylights		10.88	310
Shell (1-5)		102.06	2,912
6. Interior Partitions, Doors & Glazing		22.00	628
7. Floor, Wall & Ceiling Finishes		21.25	606
Interiors (6-7)		43.25	1,234
8. Function Equipment & Specialties		11.98	342
9. Stairs & Vertical Transportation		4.14	118
Equipment & Vertical Transportation (8-9)		16.12	460
10. Plumbing Systems		7.00	200
11. Heating, Ventilating & Air Conditioning		32.00	913
12. Electric Lighting, Power & Communications		32.00	913
13. Fire Protection Systems		4.00	114
Mechanical & Electrical (10-13)		75.00	2,140
Total Building Construction (1-13)		236.43	6,745
14. Site Preparation & Demolition		6.52	186
15. Site Paving, Structures & Landscaping		0.00	0
16. Utilities on Site		0.00	0
Total Site Construction (14-16)		6.52	186
TOTAL BUILDING & SITE (1-16)		242.94	6,931
General Conditions	9.00%	21.87	624
Contractor's Overhead & Profit or Fee	3.50%	9.25	264
PLANNED CONSTRUCTION COST	*March 2010*	274.07	7,819
Contingency for Development of Design	15.00%	41.12	1,173
RECOMMENDED BUDGET	*March 2010*	315.18	8,992

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
1. Foundations				
Reinforced concrete including excavation				
New column footings	53	CY	1,500.00	79,500
New grade beams	84	CY	1,500.00	126,000
Elevator pit	1	EA	8,500.00	8,500
Work to existing foundation systems	1	LS	5,000.00	5,000
Temporary shoring/underpinning of existing structure	1	LS	10,000.00	10,000
				229,000
2. Vertical Structure				
Shear bracing				
New structural steel columns	42	T	5,000.00	210,000
New plywood shear wall	697	SF	25.00	17,425
New reinforced concrete parapet wall, 8" thick	120	SF	60.00	7,200
Work to existing brick infill concrete frames - allowance pending further testing	1	LS	25,000.00	25,000
Fireproofing steelwork				
Sprayed fireproofing on steelwork	42	T	325.00	13,650
Miscellaneous				
Remove, repair and reinstall existing steel steeple	1	LS	25,000.00	25,000
Miscellaneous structural work	28,529	SF	1.00	28,529
				326,804
3. Floor and Roof Structure				
Floor at lowest level				
Infill and level existing concrete slab on grade	7,500	SF	10.00	75,000
Patch and repair existing concrete slab on grade	13,680	SF	2.50	34,200

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Suspended floors				
New wall anchorage connections	400	LF	75.00	30,000
Miscellaneous blocking and framing	7,349	SF	1.50	11,024
New plywood sheathing over existing sheathing	7,349	SF	4.00	29,396
Flat roofs				
New structural steel beams	11	T	5,000.00	55,000
New roof anchorage connections	1,300	LF	75.00	97,500
Strengthening of existing wood trusses	13	EA	7,500.00	97,500
Miscellaneous blocking and framing	21,180	SF	2.00	42,360
New plywood sheathing over existing sheathing	21,180	SF	4.00	84,720
Fireproofing steelwork				
Sprayed fireproofing on steelwork	11	T	325.00	3,575
Miscellaneous				
Miscellaneous structural work	28,529	SF	2.50	71,323
Miscellaneous metals and support framing	28,529	SF	2.50	71,323
				702,920

4. Exterior Cladding

Applied exterior finishes				
Clean, repair, refinish exterior wall surfaces	4,823	SF	10.00	48,225
Interior finish to exterior walls				
New gypsum board lining with paint finish	4,823	SF	4.00	19,290
Windows, glazing and louvers				
Replace exterior windows and storefronts with new aluminum framed insulated glass units	14,468	SF	75.00	1,085,063
Exterior doors, frames and hardware				
Replace exterior doors with new aluminum glazed entry doors and steel exit doors	1	LS	40,000.00	40,000

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Fascias, bands, screens and trim				
Canopies, sunshading systems, miscellaneous architectural detailing	1	LS	50,000.00	50,000
Miscellaneous				
Modifications to existing walls - new door/window openings	1	LS	100,000.00	100,000
				1,342,578

5. Roofing, Waterproofing & Skylights

Waterproofing				
Waterproofing to elevator pit	1	EA	1,250.00	1,250
Insulation				
New rigid insulation under roofing	21,180	SF	3.50	74,130
Roofing				
Membrane roofing (sarnafil)	21,180	SF	8.00	169,440
Roof or deck traffic surfaces				
Walkway pads	1	LS	2,500.00	2,500
Roofing upstands and sheetmetal				
Membrane flashings, metal parapet caps, miscellaneous sheetmetal work	1	LS	35,000.00	35,000
Roof access and ventilation				
New roof access hatch and ladder	1	LS	3,000.00	3,000
Caulking and sealants				
Miscellaneous caulking and sealants	1	LS	25,000.00	25,000
				310,320

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
6. Interior Partitions, Doors & Glazing				
Partitions and doors				
New metal stud partitions with batt insulation and painted gypsum board lining, interior glazing, wood doors in hollow metal frames	28,529	SF	22.00	627,638
				627,638
7. Floor, Wall & Ceiling Finishes				
Floor finishes				
Carpet, sheet vinyl, vinyl composition tile, ceramic tile in restrooms	28,529	SF	6.00	171,174
Bases				
Resilient rubber, wood, ceramic tile in restrooms	28,529	SF	1.00	28,529
Walls				
Acoustic wall panels, ceramic tile in restrooms	28,529	SF	5.00	142,645
Ceilings				
Suspended acoustic tile, painted gypsum board, bulkheads and fascias	28,529	SF	7.50	213,968
Miscellaneous				
Special finishes at lobbies and public areas	1	LS	50,000.00	50,000
				606,316
8. Function Equipment & Specialties				
General building equipment				
Toilet partitions and fixed restroom accessories, markerboards and tackboards, fire extinguisher cabinets, interior signage, window blinds	28,529	SF	4.00	114,116

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Shelving and millwork				
Storage shelving, reception/information counters	1	LS	25,000.00	25,000
Cabinets and countertops				
Built-in cabinets and countertops	28,529	SF	5.00	142,645
Light control and vision equipment				
Projection screens	1	LS	10,000.00	10,000
Special use equipment				
Book detection systems, book depository, miscellaneous fixed equipment	1	LS	50,000.00	50,000
				341,761

9. Stairs & Vertical Transportation

Staircase flights, floor to floor				
New single flight stairs and railings	2	FLT	20,000.00	40,000
Ladders and fire escapes				
Metal access ladders	1	LS	3,000.00	3,000
Elevators				
Hydraulic, passenger, two-stop	1	EA	75,000.00	75,000
				118,000

10. Plumbing Systems

Plumbing systems				
New plumbing systems including sanitary fixtures and associated pipework, water heating equipment, gas distribution, overflow drainage system	28,529	SF	7.00	199,703
				199,703

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
11. Heating, Ventilation & Air Conditioning				
Heating, ventilation and air conditioning systems				
New HVAC systems including heating and cooling equipment and distribution, air handling units and air distribution systems, diffusers, registers and grilles, building controls, unit ventilation, testing and inspection	28,529	SF	32.00	912,928
				912,928
12. Electrical Lighting, Power & Communication				
Electrical systems				
New electrical systems including main service and distribution, emergency power, machine, equipment and user convenience power, lighting and lighting controls, telephone and data (conduit only), fire alarm and security (conduit only)	28,529	SF	32.00	912,928
				912,928
13. Fire Protection Systems				
Fire protection systems				
New automatic wet sprinkler system	28,529	SF	4.00	114,116
				114,116
14. Site Preparation & Building Demolition				
Selective building demolition				
Remove existing exterior windows and doors	1	LS	15,000.00	15,000
Remove existing roof membrane and insulation	21,180	SF	1.50	31,770
Remove existing interior finishes, fixtures, MEP systems	28,529	SF	4.00	114,116
Miscellaneous demolition work	1	LS	25,000.00	25,000
				185,886

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
15. Site Paving, Structures & Landscaping				
				0
16. Utilities on Site				
				0

ADAPTIVE REUSE SITEWORK COMPONENT SUMMARY

		Gross Area: 41,688 SF	
		$/SF	$x1,000
14. Site Preparation & Demolition		0.74	31
15. Site Paving, Structures & Landscaping		4.47	187
16. Utilities on Site		3.60	150
TOTAL BUILDING & SITE (1-16)		8.81	367
General Conditions	9.00%	0.79	33
Contractor's Overhead & Profit or Fee	3.50%	0.34	14
PLANNED CONSTRUCTION COST	*March 2010*	9.94	414
Contingency for Development of Design	15.00%	1.49	62
RECOMMENDED BUDGET	*March 2010*	11.43	476

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
14. Site Preparation & Building Demolition				
Site clearing and grading				
General site clearing and rough grading	20,508	SF	1.50	30,762
				30,762
15. Site Paving, Structures & Landscaping				
Paving and landscaping				
New parking lot, including asphalt paving, striping, storm drainage and lighting	18,000	SF	8.00	144,000
Landscaping, including irrigation	2,508	SF	6.00	15,048
Trees	10	EA	750.00	7,500
Miscellaneous				
Site signage and fencing	1	LS	20,000.00	20,000
				186,548
16. Utilities on Site				
Site utilities				
Incoming utility connections to building	1	LS	150,000.00	150,000
				150,000

NEW BUILDING OVERALL SUMMARY

	Gross Floor Area	$ / SF	$x1,000
New Building	22,360 SF	334.67	7,483
Sitework			813
LEED Gold Allowance @ 5%			415
TOTAL Building & Sitework Construction	*March 2010*		*8,711*

Note:
New building size based on program for North Branch Library
New building quality based on Mac Arthur Park Branch Library

Please refer to the Inclusions and Exclusions sections of this report

NEW BUILDING COMPONENT SUMMARY

Gross Area: 22,360 SF

		$/SF	$x1,000
1. Foundations		7.50	168
2. Vertical Structure		12.00	268
3. Floor & Roof Structures		33.00	738
4. Exterior Cladding		49.19	1,100
5. Roofing, Waterproofing & Skylights		25.00	559
Shell (1-5)		126.69	2,833
6. Interior Partitions, Doors & Glazing		22.00	492
7. Floor, Wall & Ceiling Finishes		21.25	475
Interiors (6-7)		43.25	967
8. Function Equipment & Specialties		12.80	286
9. Stairs & Vertical Transportation		0.22	5
Equipment & Vertical Transportation (8-9)		13.03	291
10. Plumbing Systems		7.00	157
11. Heating, Ventilating & Air Conditioning		32.00	716
12. Electric Lighting, Power & Communications		32.00	716
13. Fire Protection Systems		4.00	89
Mechanical & Electrical (10-13)		75.00	1,677
Total Building Construction (1-13)		257.97	5,768
14. Site Preparation & Demolition		0.00	0
15. Site Paving, Structures & Landscaping		0.00	0
16. Utilities on Site		0.00	0
Total Site Construction (14-16)		0.00	0
TOTAL BUILDING & SITE (1-16)		257.97	5,768
General Conditions	9.00%	23.21	519
Contractor's Overhead & Profit or Fee	3.50%	9.84	220
PLANNED CONSTRUCTION COST	*March 2010*	291.02	6,507
Contingency for Development of Design	15.00%	43.65	976
RECOMMENDED BUDGET	*March 2010*	334.67	7,483

NEW BUILD SITEWORK COMPONENT SUMMARY

		Gross Area: 41,688 SF	
		$/SF	$x1,000
14. Site Preparation & Demolition		6.97	291
15. Site Paving, Structures & Landscaping		4.47	187
16. Utilities on Site		3.60	150
TOTAL BUILDING & SITE (1-16)		15.05	627
General Conditions	9.00%	1.34	56
Contractor's Overhead & Profit or Fee	3.50%	0.58	24
PLANNED CONSTRUCTION COST	*March 2010*	16.97	707
Contingency for Development of Design	15.00%	2.54	106
RECOMMENDED BUDGET	*March 2010*	19.51	813

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
14. Site Preparation & Building Demolition				
Demolition				
Remove existing building	28,529	SF	8.00	228,232
Site clearing and grading				
General site clearing and rough grading	41,688	SF	1.50	62,532
				290,764
15. Site Paving, Structures & Landscaping				
Paving and landscaping				
New parking lot, including asphalt paving, striping, storm drainage and lighting	18,000	SF	8.00	144,000
Landscaping, including irrigation	2,508	SF	6.00	15,048
Trees	10	EA	750.00	7,500
Miscellaneous				
Site signage and fencing	1	LS	20,000.00	20,000
				186,548
16. Utilities on Site				
Site utilities				
Incoming utility connections to building	1	LS	150,000.00	150,000
				150,000

HYBRID NEW BUILDING OVERALL SUMMARY

	Gross Floor Area	$ / SF	$x1,000
New Building	22,360 SF	334.67	7,483
Credit for new wall construction	(5,000)SF	60.00	(300)
Existing front wall retention and reuse			
Temporary shoring and protection	5,000 SF	50.00	250
Connection with new building	1 LS	150,000.00	150
Architectural finish	5,000 SF	40.00	200
Existing spire/tower			
Remove and store spire/tower	1 LS	10,000.00	10
Install spire/tower with new building	1 LS	100,000.00	100
Sitework			813
LEED Gold Allowance @ 5%			415
TOTAL Building & Sitework Construction	*March 2010*		*9,121*

Note:
New building size based on program for North Branch Library
New building quality based on Mac Arthur Park Branch Library

Please refer to the Inclusions and Exclusions sections of this report

QUALIFICATIONS

SCOPE OF SERVICES

The scope of services included the following:

A visual examination of the interior, exterior and site to determine the present condition of the facility. Interviews with site personnel were performed by Building Analytics, and photographic documentation is provided.

Attention was directed to conditions pertaining to local and state building code compliance, disabled access requirements, fire/life safety systems, consideration of useful life of major components, and the quality of construction.

Preparation of a brief, limited report identifying the type and condition of the major building and site components including the tenants' mechanical, electrical, and process piping systems, along with a list of work items identified having a value of $2,500.00 or more. Code and life safety issues are identified without regard for this minimum value.

LIMITATIONS

On Thursday, March 11, 2010, Building Analytics conducted an on-site evaluation of the property to determine the condition of the various components. During our site visit, we did not operate any specific equipment, or perform any tests. The findings in our Limited General Building Evaluation are not based on a comprehensive engineering study, as we did not do any destructive testing to observe the underlying conditions. Our observations and resulting Report is not intended to be an overall guarantee of the performance of any building components or systems.

At the time of the evaluation the temperature was sunny, 70 degrees Fahrenheit.

Construction documents were not available for review.

The representations regarding the status of ADA Title III Compliance for the subject property are based on visual observation and, thus, are intended to be a good faith effort to assist the Client by noting nonconforming conditions, if any, and are not considered to be based on a detailed study.

Repair, replacement, and/or improvement estimates are based on approximate quantities and costs, and other information reported to be accurate. A detailed survey of quantities for cost estimating has not been provided. Statements of the estimated costs to repair, replace, and/or improve are those that we consider as being probable for the marketplace. Such statements do not constitute a guarantee or a representation that all items that may need repair or other attention are included. The actual cost of repairs may vary substantially from Building Analytics' estimate.

Areas of project not included in the scope of services:

Concealed or inaccessible areas of the buildings and site which required the use of destructive investigation are beyond that proposed in the scope of work. Work requiring the use of special consultants beyond that noted in the scope of work. Furniture, fixtures, and processing equipment not part of the building structures. Utility rooms, and power vaults which are the property of a utility company, or any portions of the property which Building Analytics determines to be unsafe. If any area of particular concern was identified, it is so noted in the report with a recommendation for further study.

RESOURCES AND CONTACTS

Michael E. Williams, Registered Architect of Building Analytics performed the site evaluation. Mr. Brad Ferris, Structural Engineers with MHP conducted the structural and seismic evaluation. Mr. Rick Lloyd with Davis Langdon conducted the feasibility study and the cost plan.

RELIANCE

These services were performed in accordance with generally accepted practices for real estate advisors conducting this type of business. No other warranty, either expressed or implied, is made. Building Analytics is not responsible or liable for any claims that are associated with the interpretation of the available information. In the event that changes take place in the nature of this property, its use, or additional relevant information about the property is brought to our attention, the conclusions and recommendations contained in this report may not be valid.

The City of Long Redevelopment Agency, its lender, successors and assigns may use and rely upon this report in connection with a planned transaction of the subject property. Building Analytics agrees to provide reasonable cooperation in answering questions by any of the above parties in connection with that transaction.

1

1. West elevation of the theater building looking north.

2

2. West elevation of theater entry.

3

3. West elevation of theater looking south.

4

4. West elevation of the Hanson Building.

5

5. North building elevation.

6

6. East elevation looking north.

7

7. South elevation looking west.

8

8. Detail of eyebrow at furniture store.

9

9. Exterior lobby of theater building.

10

10. Water damage at the interior of the Hanson Building.

11

11. Water damage along the interior of the Hanson Building.

12

12. Water damage to wall and ceiling Hanson Building.

13

13. Water damage at stairway Hanson Building, not mold on walls.

14

14. Mold at theater ceiling finishes.

15. Theater interior lobby note water damage at ceiling.

DRAFT
PROPERTY CONDITION ASSESSMENT

OF

5870-5874 ATLANTIC AVENUE
LONG BEACH, CALIFORNIA

FOR

THE CITY OF LONG BEACH
REDEVELOPMENT AGENCY

BUILDING ANALYTICS
Building/Environmental Evaluations

File No. 108168
February 2009

DRAFT

BUILDING ANALYTICS
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February 10, 2009

File No.: 108168

Mr. Aldo Schindler
The City of Long Beach Redevelopment Agency
333 W. Ocean Boulevard, 3rd Floor
Long Beach, California 90802

Reference: 5870-5874 Atlantic Avenue
Long Beach, California

Subject: Property Condition Assessment

Dear Mr. Schindler:

Attached is the Property Condition Assessment Report you requested, which represents our evaluation of the above referenced property. The purpose of the evaluation was to evaluate the existing construction to provide information as to the structural feasibility and estimated costs of converting the building into a library branch facility. Attention was given to local and state building code compliance, consideration of the useful life expectancy of major building components and the quality of construction.

If after reviewing this report you have any questions concerning our recommendations, I would appreciate the opportunity to discuss them with you.

Sincerely,
BUILDING ANALYTICS

Fewzi Fardeheb, RA, NCARB
Senior Architect

DRAFT

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EXECUTIVE SUMMARY
5870-5784 Atlantic Avenue
Long Beach, California

On November 4, 2008, Building Analytics performed a physical condition survey of the property located at 5870 and 5874 Atlantic Avenue in Long Beach, California. The property, vacant since 2005, consists of a commercial building that was last occupied by a church and a furniture store. The building was originally constructed in 1946 and encloses 28,529 square feet. Electrical power was not provided at the time of the evaluation and flashlights had to be used to complete this assessment.

The property is located on the southeast corner of the intersection of Atlantic Avenue and 59th Street in the City of Long Beach. The surrounding properties are commercial to the south, single-family residences to the north across 59th Street and east with vacant lots across Atlantic Avenue to the west. Parking is provided in a paved parking lot just south of the building, accessible from Atlantic Avenue.

The site is rectangular in shape and consists of a reported are of 41,688 square feet. Storm water drainage is accomplished by sheet flow to the public sidewalks and into the municipal storm drain system.

The asphalt paving in the parking lot is in very poor condition. Resurfacing the parking lot with another layer of asphalt could be completed but based on the age of the paving, the very poor condition and the number of cracks in the asphalt a complete remove and replace is highly recommended. There are 46 striped parking stalls including two accessible parking stalls.

Due to the urban nature of the property there is no on site landscaping.

There are two billboards plus one Sprint telecommunication antenna on site.

Reportedly the building was constructed in several phases in the mid 1940's the elements of construction include and features wood-frame roof structures, concrete and brick masonry perimeter walls, slab-on-grade first floors, and shallow concrete foundations.

The roofing system consists of a built-up membrane with mineral faced capsheet. The membrane is in poor condition and needs to be replaced. Roof leaks and damage were noted throughout the building's interior.

The exterior wall finishes are painted and in fair to poor condition. The former church's exterior doors consist of two pairs of hinged doors that are in fair condition. The former furniture store exterior doors are part of an aluminum storefront system. Other exterior doors include hollow metal doors set in metal frames. One overhead door is provided on the north elevation. Double-hung aluminum frame windows and steel casement windows are provided. The windows are in poor condition.

The interior finishes in the church common areas consist of vinyl or carpeted floors, painted lath and plaster walls and ceilings. The building has been vacant for three years and the finishes are in poor condition with vandalism observed throughout. The interior finishes in the former furniture store consist of commercial grade carpeting and painted lath and plaster walls and ceilings. The interior finishes in the former furniture store are in poor condition and need to be replaced. Wide spread damage in the ceiling from past roof leaks will require repair.

Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of "areas of public accommodations" and "commercial facilities" on the basis of disability. The building once rehabilitated should be accessible to the disabled. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Signage is missing at the two accessible parking stalls and one of the two stalls should be designated as van accessible. At the entrance there is metal fence that slides on a permanent rail that is affixed to the sidewalk. This rail prevents a person in a wheelchair from entering the building. This barrier should be removed.

The church common areas and the sanctuary are accessible to the public but the public restrooms do not comply with ADA and need to be upgraded. The church space is two stories in height and there is no elevator has been provided to access the second floor. The former furniture store is accessible from the street. The existing restrooms are not accessible and will need to be reconstructed to meet ADA requirements.

The mechanical system for the building has been vandalized and no longer useable. It consisted of three roof mounted packaged heat pump units that served the church. The units were manufactured by *Rheem* and provided approximately 3 to 5 tons of cooling each. The tags on the units were missing making a definitive identification impossible. The units are in poor condition and need to be replaced. The furniture store is not air conditioned. Two old evaporative coolers are mounted on the roof. These coolers are in very poor condition and need to be replaced. Two suspended unit heaters provide heat in the furniture store.

Electrical service is provided overhead by Southern California Edison (SCE) to electrical meters located in an electrical closet on the northeast corner of the building. The electrical service has been vandalized and needs to be replaced.

The building is not protected by an automatic fire sprinkler system. No fire extinguishers were observed at either the former church or the former furniture store. These should be provided per code at the building once it is rehabilitated.

It was reported that consideration may be given to the adaptive reuse of the existing building. This reuse would consider utilizing the building as a public library. There will be several obstacles to overcome in completing this task including the modernization/replacement of existing building systems to meet contemporary needs and energy standards and providing access to the disable as required by the Americans with Disabilities Act (ADA) and Title 24 of the California Code of Regulations, Chapter 5, Access to Public Buildings by Persons with Disabilities.

The attached detailed structural analysis shows that the existing building does not meet the Life-Safety provisions of ASCE 41-06 for an expected scenario earthquake, and significant structural strengthening of key structural components would be required to reduce the life-safety hazard.

Although it is considered structurally feasible to strengthen the existing building to satisfy Long Beach City ordinances, State of California Code of Regulations, and the *Life-Safety* provisions of ASCE 41-06, the resulting retrofit building would not meet current building code requirements for new construction and would have increased vulnerability to structural and non-structural earthquake damage compared to a similar, newly constructed building.

Stated another way, there is a low probability that the retrofit building would collapse during a code-level earthquake but a moderate to high probability that the building would sustain heavy structural damage on the order of 20 to 30 percent of the building's replacement value. The expected level of earthquake damage to the retrofit building could result in a lengthy building closure and possible ultimate building demolition. It is our opinion that the cost to retrofit the building to satisfy 2007 California Building Code requirements for newly constructed buildings, and to assure structural performance similar to a newly constructed building, would be cost prohibitive.

In addition the attached Feasibility Study Cost Plan has a preliminary budget to the reuse of the building that is 35 percent higher then we what have typically seen in new construction with out improvements required for a public library.

In conclusion the building is 63-years and has been vacant for the past three years. During its vacancy the property has received little maintenance and has been vandalized with components of the major building systems stripped from the building. Mold was observed in the building as a result of active roof leaks and will require abatement once the roof has been made watertight. While the building can be structurally retrofit in an attempt bring it in line with current codes it will never meet current safety standards and its performance during a seismic while improved may well result significant damage and closure of the building for a period of time.

PROFILE OF EXISTING CONDITIONS

SITE

General – The subject property consists of a single-story building located at 5870 and 5874 Atlantic Avenue in the City of Long Beach. The building contains a reported 28,529 square feet and is situated on a 41,688 square foot parcel of land. Surface parking for the property is provided in a lot on the south side of the property. The 5870 Atlantic Avenue address is a former church and the 5874 Atlantic Avenue address is a former furniture store. The building has been vacant since 2005. There no was electrical power at the time of the evaluation and flashlights had to be used to complete this assessment.

The property is located at the southeast corner of the intersection of Atlantic Avenue and 59th Street in North Long Beach, California. Access to the parking lot is from one driveway along Atlantic Avenue. Public transportation (bus stops) is provided along Atlantic Avenue. Adjacent properties include commercial and retail properties along Atlantic Avenue, to the north across 59th Street and along the east side of the property are single-family residences the with vacant lots to the west across Atlantic Avenue.

Site Grading and Drainage – The subject property consists of a rectangular-shaped site that has a reported area of 41,688 square feet. The site is relatively flat but has been graded sufficiently to allow adequate drainage away from the building.

Site drainage in the parking lot is accomplished by sheet flow across the asphalt paved surfaces that discharge storm drain water to Atlantic Avenue to the west. The parking lot is flat, not allowing proper positive drainage to the street. There is a strong possibility that ponding might occur after heavy rains. Since replacement of the existing paving is strongly recommended, a properly designed drainage scheme would facilitate storm water drainage to the street. Storm water from the roof is discharged to grade.

Paving – Site paving consists of asphaltic concrete in the parking lot on the south side of the property. This asphalt paving is in very poor condition with numerous cracks and past repairs observed throughout. Resurfacing the existing parking lot with a fabric Petromat overlay could be completed but this is a temporary solution and would require renewal in a few years. A compete removal and replacement of the asphalt paving is highly recommended at this time based on the age and poor condition of the existing paving.

Concrete city sidewalks are utilized along Atlantic Boulevard that lead up to the church and store entrances. These sidewalks are the responsibility of the City of Long Beach and are in good condition.

Parking – Building Analytics verified a total of approximately 46 parking stalls, including two accessible parking stalls in the parking lot. Because of the poor paving condition, new parking stall striping should be completed at time of pavement replacement.

Landscaping – Due to the urban nature of the property no landscaping is provided.

Signage – The building has been vacant for three years and existing signage belongs to the former church and the former furniture store. The furniture store has painted signage on the front wall. Two billboards are provided on the property. One is mounted on poles along the building's south wall. The second sign is mounted on the roof of the furniture store on the northwest corner of the property.

Site Amenities – No fencing is provided on site. Wood and wrought iron fencing that used to be east and south property lines have been removed. In addition a low wrought iron fence that was once provided along the west property line was removed.

ARCHITECTURAL FEATURES

General – The building located at 5870 and 5874 Atlantic is assumed to be classified as Type V-Non rated construction. The former church was considered to be an assembly occupancy while the furniture store had a retail occupancy. The building is not protected by automatic fire sprinklers. Reportedly constructed in several phases in the mid 1940's the elements of construction include and features wood-frame roof structures, concrete and brick masonry perimeter walls, slab-on-grade first floors, and shallow concrete foundations. The building was designed and built according to the Building Code that was in force at the time of construction. Significant revisions have been made to the building code since the building was constructed.

Roofing – The roof over the building is divided into four different sections; one section is flat and the other three are sloped roof (over the bow-trusses). One section covers the former church while the other three sections cover the former furniture store.

The roofing system is similar and consists of a built-up membrane installed over sawn lumber deck. No information is provided on the roof's age. The top layer of the membrane is comprised of a mineral faced capsheet which is turned up the inside face of

the parapet wall and is set in a bed of mastic at the top of the parapet wall. This is a common detail for this type of building.

Storm water drainage from the roof is accomplished by exterior scuppers that are built into the parapet walls. There are no overflow drains as required by current code to prevent roof collapse in the cast of a blocked drain.

Several deficiencies were noted during the visual observation of the roof area. Blistering, patching, and fracture of the capsheet were observed throughout the roof. The roof is at the end of its useful life; based on visual observations of the membrane (after a rain storm) and observations of the damage to the ceiling of the furniture store and church, the roof is in poor condition and should be removed and replaced at this time.

There is a marquee above the entry to the church space and a short canopy along the front face of the building wrapping around the north elevation. Both of these elements show sings of long term water infiltration and damage. As part of any rehabilitation program these elements will require significant repair and reconstruction.

The roof is accessed by a narrow roof hatch through the attic space. The roof hatch is not up to code and should be replaced.

Exterior Walls **-** The exterior walls consist of cast-in-place reinforced concrete construction with brick infill. The exterior surface is painted. The inside face of exterior walls is generally finished with lath and plaster. The exterior walls are in poor condition with water damage noted, especially along the north wall.

Exterior Glazing Systems **–** The building exterior glazing system consists of storefront display windows at the furniture store. These display windows have clear glazing and are set in aluminum frames. These windows are in poor condition. Exterior windows at the church consist of steel casement windows and double-hung aluminum framed windows. The existing steel windows are hard to operate and most of the glass is damaged. The existing storefront does not meet code for impact. Current recommendations are to replace the storefront and windows throughout the building.

Exterior Doors **–** The church's exterior doors consist of two pairs of hinged glass and aluminum doors. These doors are equipped with panic hardware as required by code. The furniture store's exterior door consists of hinged glass/aluminum door. There are additional exit and service doors around the building. These doors are typically solid core painted metal doors in metal frames. All exterior doors are in poor condition and should be replaced.

Interior Finishes – The church occupied two floors. The second floor consists of a large meeting/reception room with a kitchenette and several rooms utilized as offices. The church's ground floor has a large sanctuary and numerous activity rooms and offices. Typical interior finishes on the first and second floors include commercial grade carpeting, vinyl flooring or painted concrete slab on grade, painted lath and plaster walls and ceilings. The church restroom finishes include terrazzo flooring, ceramic tile wainscot and painted lath and plaster ceiling.

The interior finishes in the furniture store consist of commercial grade carpeting and painted lath and plaster walls and ceilings. Damage to the ceilings and interior walls from roof leaks was observed throughout the tenant space. On the second floor of the furniture store, active roof leaks were observed on November 4, 2008 and sections of the water damaged ceiling materials were on the floor. Active mold growth was observed on the floor finishes and on the exposed ceiling finish material.

Since the building has been vacant and neglected for over three years, the interior finishes are in poor condition and will require complete replacement. The active roof leaks should be stopped to prevent additional water intrusion and the spread of mold throughout the building.

Disabled Access – The Americans with Disabilities Act (PL 101-336), was enacted on July 26, 1990, and provides comprehensive civil rights protection for individuals with disabilities in the area of employment and public accommodations.

The ADA stipulates that barriers preventing the use of buildings by disabled persons should be removed, if such removal is readily achievable, i.e., does not cause undue expense. While such definitions are vague, certain items are considered readily achievable, such as handicap-accessible restrooms, ramps in addition to stairways, handicap spaces in parking lots, lever door operation rather than doorknobs, telecommunication devices for the deaf, closed caption decoders, and emergency warning systems.

Title I of the ADA requires that employers not discriminate in hiring the disabled and those employers must make accommodations for disabled employees. Title I states that it is the responsibility of the employer to make the disabled employee's workplace accessible. Modifications to staff areas to accommodate a disabled employee would therefore be the building owner's responsibility.

The ADA is not a building code and is not enforced by building code officials. The ADA is not implemented as a part of most local building permit applications. Enforcement is accomplished through litigation on behalf of disabled individuals who believe that they

have been discriminated against. It is recommended that the client seek legal council in understanding the obligation of property owners related to the ADA and related to their existing leasing agreements.

All architectural barriers in public accommodations should have been eliminated under the act as of January 26, 1992. The ADA regulations include priorities for barrier removal in existing facilities as follows:

1. Accessible Entrance: Provide access that enables disabled individuals to enter the facility from the public sidewalks, parking, or public transportation.

2. Access to Goods and Services: Provide access to areas where goods and services are made available to the public.

3. Usability of Restrooms: Provide access to restroom facilities.

4. Additional Access: Provide access to goods, services, facilities, privileges, advantages, or accommodations.

None of the accessible parking stalls is van accessible. A parking facility providing 26 to 50 parking spaces the ADA requires that two accessible parking stalls be provided, with one stall identified as "van accessible." There are already two accessible stalls in this parking lot but none is van accessible. A wider 96" access aisle should be striped adjacent to one of the existing accessible stalls and proper pole-mounted signage should be installed.

Disabled access to the church's main entrance is blocked because of a gate rail that is mounted to the concrete paving. This rail should be removed.

Access to the sanctuary is provided for disabled persons. The church's men's and women's restrooms do not comply with ADA because of narrow toilet stalls, inaccessible urinals and lavatories. A complete upgrade is required. A drinking fountain located in the church common areas is not accessible and needs to be upgraded.

The furniture store is accessible from Atlantic Avenue. It is currently a large vacant store with a mezzanine. The existing restrooms do not comply with ADA and will need a complete upgrade.

MECHANICAL SYSTEMS

Heating and cooling for the church was accomplished using three roof-mounted packaged electric heat pumps. The units are manufactured by Rheem and have been vandalized and are no longer operational. Before the space can be utilized

Two evaporative coolers were observed over the furniture store. These units have been vandalized and need to be replaced. Two suspended heaters were observed in the furniture store.

PLUMBING SYSTEMS

Natural Gas – Natural gas service is provided to the building. It is utilized for the suspended heaters in the furniture store space.

Domestic Water –Domestic water service is provided underground by the City of Long Beach to a meter located in the sidewalk along Atlantic Avenue. As the building is vacant the domestic water service has been turned off. Water service when provided, serves all restroom facilities, mechanical equipment, and miscellaneous tenant applications. The domestic water piping that could be observed was a mixture of copper and galvanized piping. Hot water for the church is provided from a 40-gallon electric water heater located in a closet adjacent to the restrooms. This water heater does not appear to be functional. The domestic water system was observed to be in poor condition. The piping will require removal and replacement based on it age and the mixture of copper and galvanized piping.

Plumbing Fixtures – The plumbing fixtures consist of floor-mounted flush valve water closets, floor/wall-mounted urinals and counter-mounted lavatories. The fixtures are in poor condition and require replacement.

Sanitary Sewer System – The building is connected to the City of Long Beach sanitary sewer system located in the adjacent streets. Within the building, the waste lines are run using cast iron pipe. Adequate cleanouts appear to have been provided within the building and beyond the building lines. The materials utilized underground beyond the building line are unknown. Based on the age of the building the sanitary sewer system should be replaced.

Storm Drain Water System – Storm water that collects on the roof of the building is discharged on grade, which in turn is directed to the city storm drain system.

ELECTRICAL SYSTEMS

Power – Electrical service to the site is supplied overhead by Southern California Edison to meters located at the rear of the building. The building has been vacant for three years and during that time the majority of the electrical wiring, switchboards, and panels have been vandalized and stripped of the copper wiring.

Based on the damage to the electrical equipment a new electrical service is required.

Lighting – The building has been vandalized and most of the lighting fixtures have been removed. The fixtures included incandescent light fixtures and surface-mounted fluorescent light fixtures at the former church. Interior lighting at the furniture store included surface-mounted fluorescent light fixtures. Outdoor lighting is limited to the street lights provided by the City of Long Beach along Atlantic Avenue.

Telephone – The building is vacant and there is no telephone service.

FIRE AND LIFE SAFETY SYSTEMS

Fire Protection Services – The building is not provided with an automatic fire sprinkler system. Site fire protection is provided by fire hydrants situated along Atlantic Avenue. The proposed redevelopment of the building will most likely require the installation of an automatic fire sprinkler system.

Portable Fire Extinguishers – Fire extinguishers were not provided in the church or the furniture store tenant spaces.

CONCLUSION

The building is 63-years and has been vacant for the past three years. During its vacancy the property has received little maintenance and has been vandalized with components of the major building systems stripped from the building. Mold was observed in the building as a result of active roof leaks and will require abatement once the roof has been made watertight. While the building can be structurally retrofit in an attempt bring it in line with current codes it will never meet current safety standards and its performance during a seismic while improved may well result significant damage and closure of the building for a period of time.

DATE: 2/10/09

Opinions of Probable Costs to Remedy Deficiencies

DRAFT

5870-5874 Atlantic Avenue
Long Beach, California

Item No.	Recommendation	Rating	Qty.	Unit	Unit Cost	Year 1 2008	Year 2 2009	Year 3 2010	Year 4 2011	Year 5 2012	Year 6 2013	Year 7 2014	Year 8 2015	Year 9 2016	Year 10 2017	Immediate Expenditure		Year 2 to 10	ITEM TOTALS
																Regulatory Compliance	Deferred Maintenance Correction	Preventative Maintenance	
	A. SITE																		
	Remove and replace the existing asphalt paving. The asphalt paving is in poor condition and has worsened. Restripe all parking stalls including accessible stalls. The area is approximately 17,500 square feet.	2	17,500	SF	$5	$87,500											$87,500		
	Seal coat the asphalt paving and restripe the parking stalls on a 3-5 year cycle as part of regular maintenance.	3	17,500	SF	$0.25				$4,375				$4,375					$8,750	
	Subtotal					$87,500	$0	$0	$4,375	$0	$0	$0	$4,375	$0	$0	$0	$87,500	$8,750	$96,250
	B. STRUCTURAL																		
	Refer to separate structural report by MHP for a description of the work required and Feasibility Study Cost Plan for pricing breakdown.	1	1	LS	$888,524	$888,524										$888,524			$888,524
	Subtotal					$888,524	$0	$0	$0	$0	$0	$0	$0	$0	$0	$888,524	$0	$0	$888,524
	C. BUILDING EXTERIOR																		
	Repair the existing steel windows throughout the building, replace the store front windows and replace all exterior doors.	2	1	LS	$357,050	$357,050											$357,050		
	Repair damage to exterior walls and repaint.	2	16,396	SF	$10	$163,960											$163,960		
	Subtotal					$521,010	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$521,010	$0	$521,010
	D. ROOFING																		
	Remove and replace the existing roofing material and replace any deteriorated underlying structural wood roof deck. The roofing is in poor condition. Install overflow scuppers adjacent roof drains as required by code. Cost is high because of poor condition and roof leaks after the building was left with maintenance.	2	21,180	SF	$13.50	$285,930											$285,930		
	Establish an annual roof maintenance program after the roof is replaced.	3	1	LS	$1,000		$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000			$9,000	
	Replace the existing narrow and unsafe roof hatch with an OSHA approved roof hatch.	1	1	EA	$3,000	$3,000										$3,000			
	Subtotal					$288,930	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$3,000	$285,930	$9,000	$297,930
	E. BUILDING INTERIORS																		
	Remove and replace the interior finishes in the vacant furniture store and in the former church. The finishes are in very poor condition. Replace damaged ceiling material from roof leaks. The cost is approximate ($20/sf) depending on the level of improvements sought.	2	28,529	SF	$19.50	$570,000											$570,000		
	Replace lobby area finishes.	2	1	LS	$50,000	$50,000											$50,000		
	Subtotal					$620,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$620,000	$0	$620,000
	F. LIMITED DISABLED-ACCESS REVIEW																		
	Install pole-mounted signage at the two accessible parking stalls to identify them as accessible to the disabled. Stripe a wider 96" access aisle at one of the two accessible stalls so that it is designated as "van accessible". Post new signage at the entrance of the parking lot to warn people that unauthorized cars parked in accessible spaces could be towed away.	1	1	LS	$2,000	$2,000										$2,000			
	Remove the metal rail that is floor-mounted at the church main entrance. This rail blocks the main entrance to the church.	1	1	LS	$1,000	$1,000										$1,000			
	Replace the drinking fountain located in the church common area. This drinking fountain does not comply with ADA.	1	1	EA	$2,000	$2,000										$2,000			
	Build new men and women restrooms at the former furniture store to comply with ADA.	1	2	EA	$25,000	$50,000										$50,000			
	Upgrade restrooms at the former church. These do not comply with ADA because of narrow toilet stalls and inaccessible fixtures.	1	2	EA	$30,000	$60,000										$60,000			
	Subtotal					$115,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$115,000	$0	$0	$115,000

Rating:
1 - Regulatory Compliance
2 - Deferred Maintenance Correction
3 - Preventive Maintenance

DATE: 2/10/09

Opinions of Probable Costs to Remedy Deficiencies

DRAFT

5870-5874 Atlantic Avenue
Long Beach, California

Item No.	Recommendation	Rating	Qty.	Unit	Unit Cost	Year 1 2008	Year 2 2009	Year 3 2010	Year 4 2011	Year 5 2012	Year 6 2013	Year 7 2014	Year 8 2015	Year 9 2016	Year 10 2017	Immediate Expenditure		Year 2 to 10	ITEM TOTALS
																Regulatory Compliance	Deferred Maintenance Correction	Preventative Maintenance	
	G. HVAC																		
	Replace the existing 3 rooftop package units that are dilapidated and vandalized. This cost is for the units only.	2	3	EA	$7,500	$22,500											$22,500		
	Subtotal					$22,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$22,500	$0	$22,500
	H. PLUMBING SYSTEMS																		
	Replace existing plumbing fixtures as part of tenant improvements. Replace damaged water lines.	2	28,529	SF	$9	$256,761											$256,761		
	Subtotal					$256,761	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$256,761	$0	$256,761
	I. ELECTRICAL SYSTEMS																		
	Install brand new electrical service at the building including new swtichgear, conduits, wiring, etc. This has been vandalized.	1	28,529	SF	$35	$998,515										$998,515			
	Subtotal					$998,515	$0	$0	$0	$0	$0	$0	$0	$0	$0	$998,515	$0	$0	$998,515
	J. FIRE/LIFE-SAFETY SYSTEMS																		
	Provide fire extinguishers at both the former church and at the former furniture store as required by code at time of tenant improvement.	1	1	LS	$2,000	$2,000										$2,000			
	Subtotal					$2,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,000	$0	$0	$2,000
	K. VERTICAL TRANSPORTATION																		
	No elevator is provided or required.																		$0
	Subtotal					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	L. SPECIAL SYSTEMS																		
	Conduct a mold survey based on the ongoing water damage at the property. This cost does not include the abatement of effected areas.	1	1	LS	$3,500	$3,500										$3,500			$3,500
	Subtotal					$3,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,500	$0	$0	$3,500
	M. PUBLIC RECORDS REVIEW																		
	Not applicable.																		$0
	Subtotal					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Totals by Year					$3,804,240	$1,000	$1,000	$5,375	$1,000	$1,000	$1,000	$5,375	$1,000	$1,000	$2,010,539	$1,793,701	$17,750	$3,821,990
	CONTINGENCY @ 10%															$201,054	$179,370	$1,775	$382,199
	GRAND TOTAL															$2,211,593	$1,973,071	$19,525	$4,204,189

Rating:
1 - Regulatory Compliance
2 - Deferred Maintenance Correction
3 - Preventive Maintenance

QUALIFICATIONS

SCOPE OF SERVICES

The scope of services included the following:

A visual examination of the interior, exterior and site to determine the present condition of the facility. Interviews with site personnel were performed by Building Analytics, and photographic documentation is provided.

Attention was directed to conditions pertaining to local and state building code compliance, disabled access requirements, fire/life safety systems, consideration of useful life of major components, and the quality of construction.

Preparation of a brief, limited report identifying the type and condition of the major building and site components including the tenants' mechanical, electrical, and process piping systems, along with a list of work items identified having a value of $2,500.00 or more. Code and life safety issues are identified without regard for this minimum value.

LIMITATIONS

On November 4, 2008, Building Analytics conducted an on-site evaluation of the property to determine the condition of the various components. During our site visit, we did not operate any specific equipment, or perform any tests. The findings in our Limited General Building Evaluation are not based on a comprehensive engineering study, as we did not do any destructive testing to observe the underlying conditions. Our observations and resulting Report is not intended to be an overall guarantee of the performance of any building components or systems.

At the time of the evaluation the temperature was sunny, 65-70 degrees Fahrenheit. Construction documents were not available for review.

The representations regarding the status of ADA Title III Compliance for the subject property are based on visual observation and, thus, are intended to be a good faith effort to assist the Client by noting nonconforming conditions, if any, and are not considered to be based on a detailed study.

Repair, replacement, and/or improvement estimates are based on approximate quantities and costs, and other information reported to be accurate. A detailed survey of quantities for cost estimating has not been provided. Statements of the estimated costs to repair, replace, and/or improve are those that we consider as being probable for the marketplace. Such statements do not constitute a guarantee or a representation that all items that may need repair or other attention are included. The actual cost of repairs may vary substantially from Building Analytics' estimate.

Areas of project not included in the scope of services:

Concealed or inaccessible areas of the buildings and site which required the use of destructive investigation are beyond that proposed in the scope of work. Work requiring the use of special consultants beyond that noted in the scope of work. Furniture, fixtures, and processing equipment not part of the building structures. Utility rooms, and power vaults which are the property of a utility company, or any portions of the property which Building Analytics determines to be unsafe. If any area of particular concern was identified, it is so noted in the report with a recommendation for further study.

RESOURCES AND CONTACTS

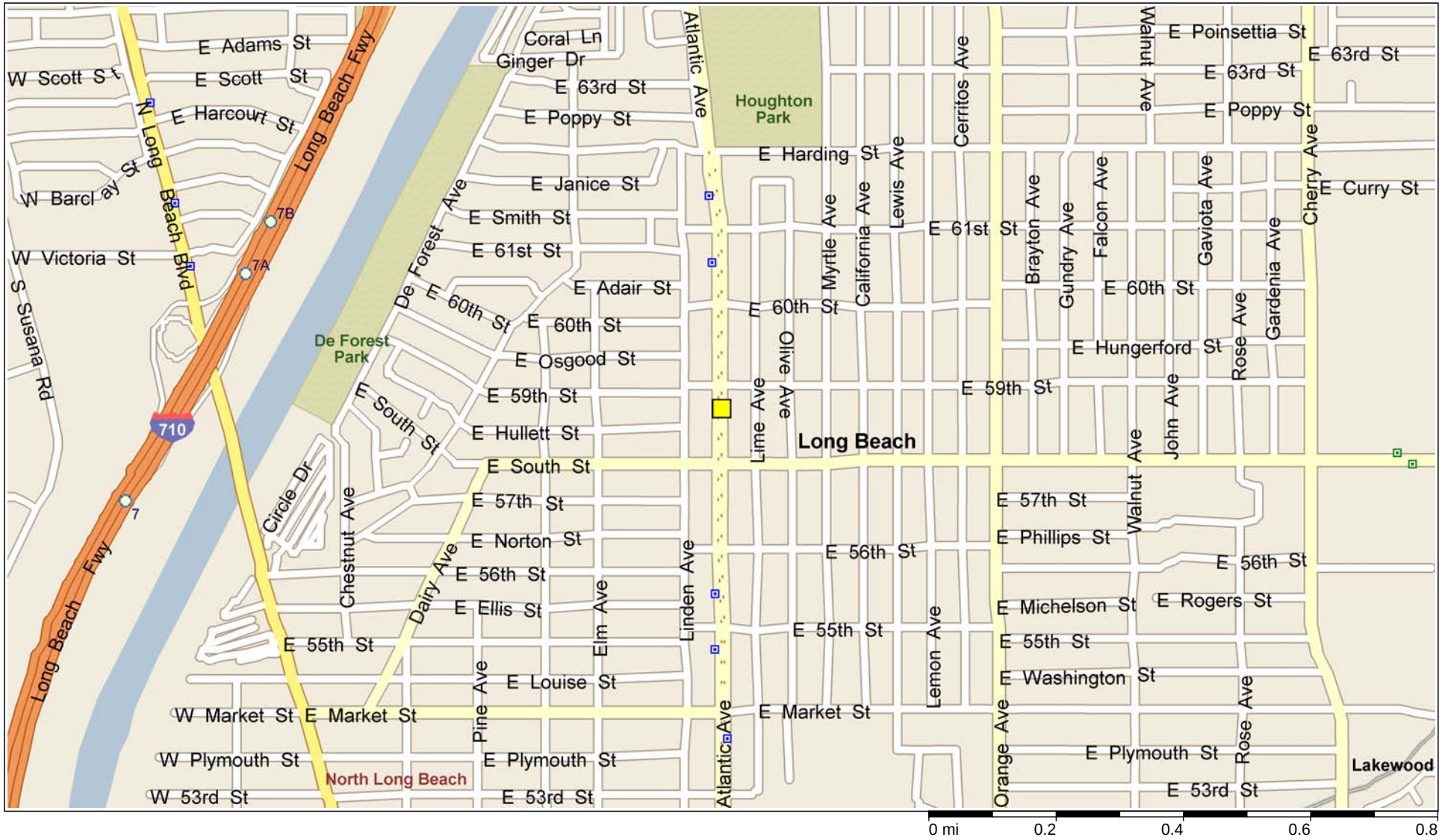
Fewzi Fardeheb, RA, NCARB, Senior Architect of Building Analytics performed the site evaluation. Mr. Brad Ferris and Mr. Eric Berkes, Structural Engineers with MHP conducted the structural and seismic evaluation. Mr. Rick Lloyd with Davis Langdon conducted the feasibility study and the cost plan.

RELIANCE

These services were performed in accordance with generally accepted practices for real estate advisors conducting this type of business. No other warranty, either expressed or implied, is made. Building Analytics is not responsible or liable for any claims that are associated with the interpretation of the available information. In the event that changes take place in the nature of this property, its use, or additional relevant information about the property is brought to our attention, the conclusions and recommendations contained in this report may not be valid.

The City of Long Redevelopment Agency, its lender, successors and assigns may use and rely upon this report in connection with a planned transaction of the subject property. Building Analytics agrees to provide reasonable cooperation in answering questions by any of the above parties in connection with that transaction.

5870-5874 Atlantic Avenue, Long Beach, CA



1

1. Overall view of the property.

2

2. South elevation.

3

3. East elevation.

4

4. North elevation.

5

5. West elevation.

6

6. South and east elevations.

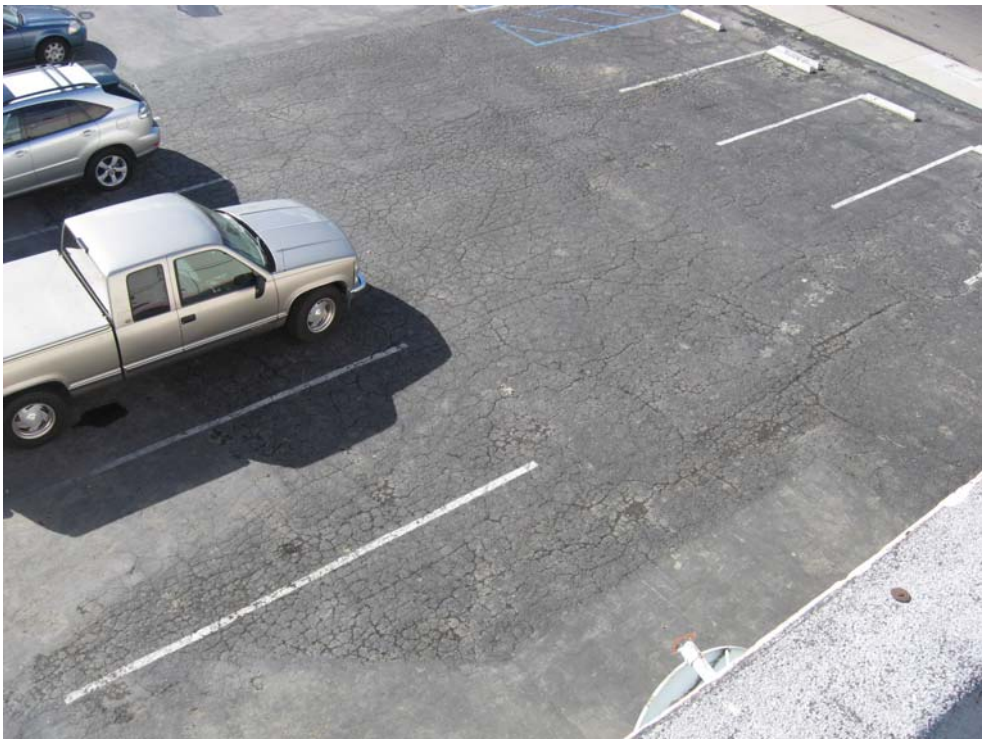
7

7. Entrance to the former church space.

8

8. Entrance to the furniture store.

9



9. Cracks visible throughout the paving.

10

10. Poor condition of asphalt paving.

11

11. Overall view of the parking lot.

12

12. Poor condition of the overhand at the furniture store.

13

13. Water damage over the exterior wall.

14

14. Water damage on the former church mezzanine level.

15

15. Interior finishes at the former church main hallway.

16

16. Water damage in the former furniture store.

17

17. Water damage in the former furniture store.

18

18. Water damage in the interior walls of the furniture store.

19

19. Active roof leak and damage inside the former furniture store.

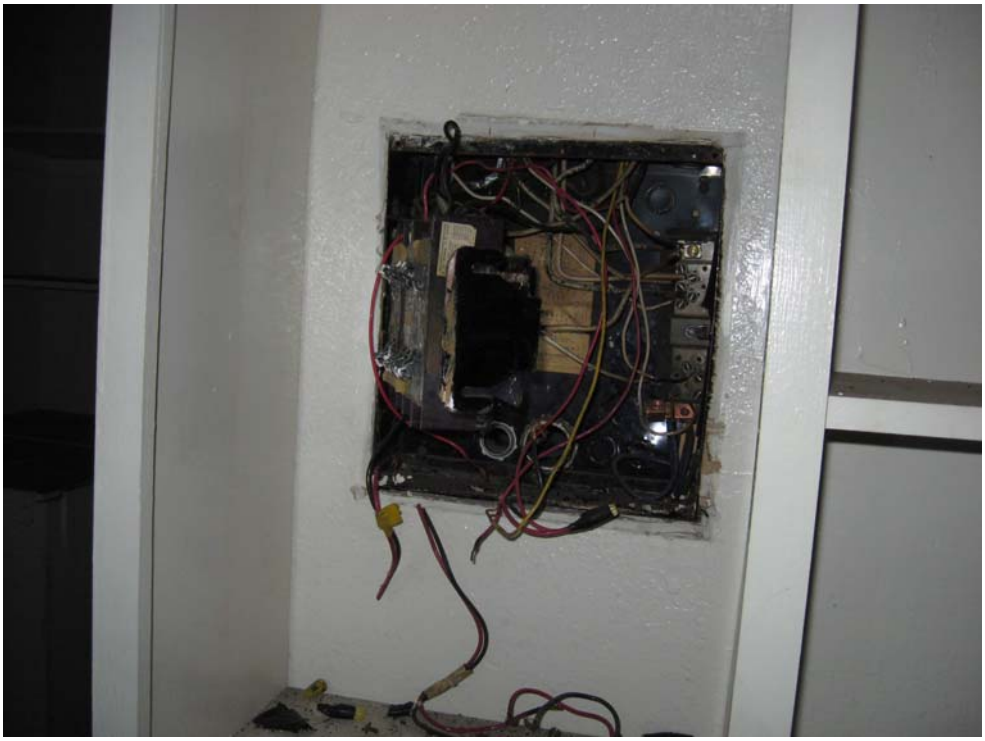
20

20. Active roof leak and damage inside former furniture store.

21

21. Vandalized electrical equipment.

22



22. Electrical panel stripped of wires.

23

23. Water damage to the ceilings is evident throughout.

24

24. Water damage from the ceiling of the auditorium is evident throughout.

25

25. Restrooms inside the former church.

26

26. View of the different roof areas.

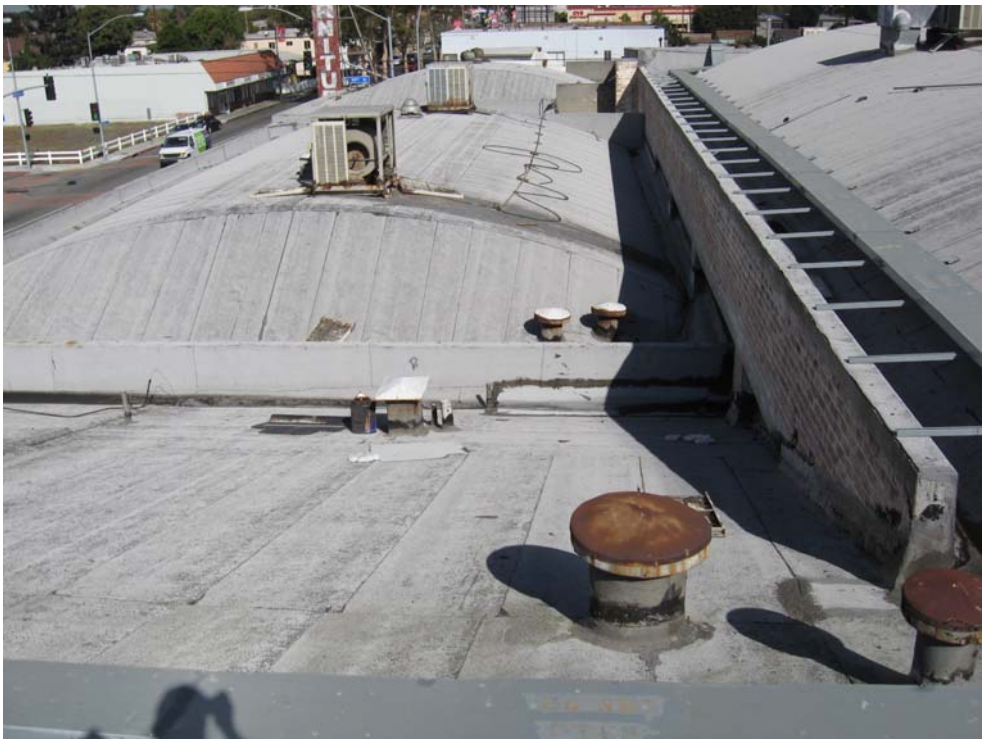
27

27. Roof hatch is unsafe and not up to code.

28

28. Section of the roof over the former church.

29



29. Section of the roof over the former furniture store.

30

30. Poor condition of the roof.

31

31. Mechanical units on the roof have been vandalized.

32

32. Vandalized mechanical equipment.

February 4, 2008

Mr. Michael Williams
Building Analytics
502 South Verdugo Drive, Suite 200
Burbank, CA 91502

Re: Structural/Seismic Feasibility Study
Proposed Remodel of Existing Building
5870-5874 Atlantic Avenue, Long Beach, CA 90805
MHP JN 08-0472-002

Dear Mr. DiJulio:

At your request, MHP, Inc conducted a structural/seismic feasibility study for the proposed remodel of the referenced building. The subject project consists of a partial two-story building located on a flat site in Long Beach, California. The subject project reportedly was constructed in several phases in the mid 1940's and features wood-frame roof structures, concrete and brick masonry perimeter walls, slab-on-grade first floors, and shallow concrete foundations. The purpose of this study was to evaluate the existing construction and determine the structural feasibility of converting the building into a library branch office. This study is to be used for general planning purposes and to establish rough construction cost estimates for the structural revisions.

Original construction documents for the building were not available for our review. Our description and assessment of the structural systems are based on our site observations and engineering knowledge of similarly constructed buildings.

BUILDING DESCRIPTION

Foundations

The building is supported on conventional shallow concrete foundation systems with isolated spread footings below columns and continuous footings below bearing walls. The first floor level of each structure is a concrete slab-on-grade of unknown thickness or reinforcing.

Framing

The main church roof is a barrel-shaped structure comprised of sawn 1x straight wood sheathing spanning across regularly spaced sawn 2x wood rafters that frame between wood bowstring trusses. The trusses span east-west between a brick infilled concrete frame wall at the west face and brick masonry bearing wall at the east face. Regularly spaced sawn wood ceiling joists frame between the truss bottom chords. A conventionally framed gable roof extends westward from the south end of the barrel roof. The hip roof spans between the south brick infilled concrete frame wall and north concrete bearing wall.

4500 E. Pacific Coast Hwy., Suite 100, Long Beach, CA 90804 562.985.3200 P 562.985.1011 F www.mhpse.com

The 2nd floor structure occupying the south end of the church building is likely constructed with straight sawn wood sheathing spanning across regularly spaced sawn wood joists that frame between the perimeter brick/concrete bearing walls and interior wood-stud bearing walls. Three individual roof structures comprise the retail store portion; two barrel-shaped wood roofs and a flat wood roof. The barrel-shaped roof structures are framed similarly to the church's barrel roof. The retail barrel roof structures extend between the west perimeter storefront wall and the east interior (original west church exterior) brick infilled concrete frame wall. The flat roof area is conventionally framed with sawn 1x sheathing spanning across regularly spaced sawn 2x wood rafters that extend between north and south concrete bearing walls.

The 2nd floor structure set below the flat retail roof is likely constructed with straight sawn wood sheathing spanning across regularly spaced sawn wood joists that frame between interior wood beams and the north and south concrete bearing walls.

Lateral Force Resisting System

Lateral wind and earthquake forces acting on the building are resisted by the straight-laid, wood roof and floor sheathing, which act as diaphragms, or deep horizontal beams, spanning between the vertical, lateral force resisting systems. The vertical, lateral force resisting systems consist of brick infilled concrete frame walls set at the north, east, south and west faces of the original church structure, reinforced concrete shear walls set at the north, east and south faces of the retail structure, and a concrete frame set at the open west face of the retail structure. The shear walls and concrete frames transmit the lateral forces to the concrete foundations.

SEISMIC HAZARD EVALUATION

Site-specific ground motion is characterized in terms of peak ground acceleration (PGA) and Modified Mercalli Intensity (MMI). The MMI scale is useful for correlation with data on the performance of structures in past earthquakes, and is based on a qualitative description of the perceptions of people and the amount of damage sustained by various types of structures during earthquakes. Ground motion with a specified return period is estimated based on a probabilistic seismic hazard analysis (PSHA) considering the location, geometry, slip rate and maximum magnitude for active and potentially-active faults in the region and the use of ground motion attenuation relations suitable for the type of faulting and the site soil profile. The site is exposed to a high level of seismic hazard. Peak ground acceleration (PGA) at the site associated with the Design Basis Earthquake (DBE or 475-year return period event) is estimated to be 0.40g (MMI VIII–IX).

Based on published geologic reports and maps, strong ground shaking may affect the site as the result of earthquakes likely to occur on the following regional faults:

REGIONAL FAULTS			
Fault or Fault Zone	**Distance and Direction From Site**	**Recent Activity**	**Maximum Magnitude**
Newport-Inglewood (A)	1.5 miles SW	1933 M6.3	6.9
Palos Verdes (A)	8 mile SW	--	7.1
Whittier (A)	13 miles NE	1987 M5.9	6.8
Raymond (A)	18 miles N	--	6.5
Hollywood (A)	18 miles NW	--	6.5
San Andreas (A)	44 miles NE	1857 M7.8	7.8

Active (A) or Potentially-Active (PA) Fault

Significant recent earthquakes in the vicinity of the site include the 1933 M6.4 Long Beach earthquake (0.20g estimated site ground acceleration), the 1941 M5.4 Torrance-Gardena earthquake (0.20g), the 1987 M5.9 Whittier Narrows earthquake (0.15g), and the 1994 M6.7 Northridge earthquake (0.10g). Ground motion at the site caused by recent earthquakes in the region has not exceeded the estimated future ground motion for the 475-year earthquake.

Fault Rupture

California Earthquake Fault Zones (EFZs), established by the State of California under the Alquist-Priolo Earthquake Fault Zoning Act of 1973, are delineated around known surface traces of active faults. In accordance with State law, cities and counties must withhold development permits for new construction used for human occupancy and for extensive additions to or remodeling of existing structures until geologic investigations demonstrate that the proposed construction is not threatened by surface displacement from future faulting. If an active fault is found, a structure cannot be placed over the trace of the fault and must be set back from the fault (generally 50 feet). In addition, the effects of surface faulting are considered when estimating the degree of earthquake-related damage for existing structures located within the fault or drag zone.

The nearest mapped active or potentially-active fault is the active Newport-Inglewood Fault at a distance of 1.5 miles southwest of the site. The site is not located within a California Earthquake Fault Zone (nearest EFZ is on the Newport-Inglewood Fault). Since no active or potentially active faults are known to cross the site, the potential for ground surface rupture due to recognized faulting is considered to be low.

Other Earthquake Hazards

Seismically-induced settlement, liquefaction (loss of soil strength in saturated soil deposits during strong ground shaking), and slope failure (landslides or local failures triggered by earthquakes) may affect soils supporting foundations. The effects of these other earthquake hazards can lead to loss of bearing capacity and excessive settlement of foundations, resulting in increased seismic-related building damage. In California, Seismic Hazard Zone (SHZ) maps have been issued by the State Department of Conservation for some major urban areas showing areas prone to liquefaction and landslides. These maps show areas where

investigations are required for liquefaction and landslide hazards before development and construction permits can be obtained.

Regional geologic maps indicate subsoils at the site consist of Holocene alluvium with groundwater at a depth of approximately 30 feet. The site is located within a California SHZ for liquefaction hazards (Long Beach Quadrangle official map released March 25, 1999). Additionally, regional hazard maps indicate the site borders a liquefaction hazard area. Based on this information, the seismically-induced liquefaction potential at the site is considered low to moderate.

The site consists of level ground with no adjacent slopes above or below the site; thus the potential for earthquake-induced landslide or slope stability failure is low.

The site is not located adjacent to a coastal or inland body of water and is thus not subject to flooding by earthquake-related tsunami or seiche. The site is, however, mapped as within the dam failure inundation area below Whittier Narrows Dam, 11 miles to the north of the site. The mapped inundation area is conservatively based on an assumed catastrophic failure of the dam during peak storage as the result of an earthquake, and represents a worst-case scenario for public emergency planning. Consequently, the earthquake-related flooding or inundation potential at the site due to tsunami, seiche, or dam failure is considered to be low.

FEASABILITY STUDY

The feasibility study was completed to evaluate the project building's ability to meet a *Life-Safety* level of performance, as defined by ASCE 41-06 *Seismic Rehabilitation of Existing Buildings*, for the designated earthquake hazard level. The level of ground motion at the site is defined in accordance with the requirements of ASCE 41-06 and is based upon a design basis ground motion with a probability of exceedance of 10 percent in a 50-year exposure period (equivalent to an average return period of 475 years). The analysis utilized linear static procedures that incorporate general engineering principals. In the linear static procedure, hand calculations are used to determine the magnitude of lateral forces on individual elements within the building to investigate the elements adequacy to resist lateral loads. The calculated elastic demand (D) for each element is compared to the capacity (C) of that element, which is defined as the elastic strength at yielding. The capacity of those members capable of inelastic behavior is multiplied by a component modification factor to account for permissible deformations beyond yield. These modification factors are referred to as *m*-factors. Acceptable *m*-factors for various component actions are defined in ACSE 41-06 and vary depending on the level of evaluation performance desired (Life-Safety for 475 year return period). Acceptable element performance is achieved when the element capacity multiplied by the appropriate m-factor is greater than or equal to the demand from the analysis. Another way to define acceptable behavior is when the ratio of demand to capacity for each element is less than or equal to the acceptable values of *m* for a given type of action and performance objective.

Based upon the results of the structural analysis, the predicted structural performance of the existing structure ***does not*** satisfy all of the provisions of *Life-Safety* as outlined in ASCE 41-06. Seismic strengthening of multiple critical structural elements would be required to reduce the life-safety hazards associated with the building. To bring the building to a *Life-Safety* performance level, the following strengthening measures would be required:

- Strengthen the existing wood roof and floor diaphragms with plywood sheathing over the existing straight and diagonal sheathing. Localized strengthening of the existing wood rafters, joists, beams and trusses may be required to account for the added weight of the plywood sheathing.

- Anchorage of the heavy concrete / brick masonry walls is accomplished with wood ledgers that are bolted to the inside face of the walls. The ledgers act in cross-grain bending to transmit the out-of-plane anchorage forces from the walls to the 1x roof sheathing, which is nailed to the tops of the ledgers. This anchorage system presents a significant life-safety hazard and has not been permitted since the adoption of the 1973 UBC.

  New wall anchorage systems are required at all reinforced concrete and brick walls. New wall anchorage would consist of steel holdown or strap type hardware bolted to new and/or existing wood framing and connected with through bolts to the existing concrete and brick infill walls. Additionally, new steel strap sub-diaphragm ties are required to transfer the wall anchorage forces into the diaphragm.

- The west façade of the retail store features a series of large storefront windows set between narrow concrete columns or piers. This type of construction is considered relatively flexible and is vulnerable to significant in-plane lateral displacements during strong seismic shaking. The open elevation will require strengthening via the installation of two, single-bay steel moment-resisting or braced frames. The frames will require new foundation elements and diaphragm drag beams.. Temporary shoring of the existing roof framing would be required for installation of the new frames.

- The main church roof has a large diaphragm aspect ratio in the east/west direction, which results in large diaphragm seismic shear forces. To reduce the diaphragm shear force, a new drag element near the midpoint of the diaphragm will be required. The drag element would consist of a plywood sheathed wood stud shear wall constructed between the existing roof rafters and a new low steel roof beam. The steel beam will tie into a new concrete parapet constructed on top of the existing transverse concrete shear wall located to the west of the diaphragm. The existing shear wall will distribute the lateral forces to the existing concrete foundations.

- The south second floor structure appears to have limited lateral force resisting elements along the north elevation. A new plywood shear wall will be required at the open north elevation. The shear wall can be installed on existing foundations. Steel holdown hardware anchored into the existing foundations with threaded rods set in epoxy will be required at each end of the wall to resist overturning forces.

- The barrel-shaped roof structures are constructed using long-span fabricated wood trusses. As these truss assemblies age, local stress concentrations in the truss chords, webs, and connections caused by knots, bolt holes, and loaded end and edge conditions can cause sudden failure. The degree of risk is influenced by the age of the assemblies and the conservatism of the original design and construction. This situation can be further aggravated when added loads associated with mechanical or tenant improvement systems are added to the roof structure.

  The existing trusses will require strengthening. Strengthening measures would include the addition of two post-tensioned steel rods along side the bottom chord of each truss. The

rods are designed to act as tension members in the event that the vulnerable truss bottom tension chords fail. Attachment of the rods to the trusses would consist of steel brackets bolted to each side of the truss chord. Approximately six trusses have previously been strengthened. The existing rods and brackets should be replaced to account for increased roof dead loads and seismic wall anchorage forces.

- The analysis of the brick infill concrete frames was completed based on the assumption that the walls were designed and constructed to meet minimum code-level requirements in effect at the time of construction. The shear strength of each wall was determined using the tabulated shear capacities defined in ASCE 41-06. The walls appeared to meet the *Life-Safety* level of performance when analyzed as shear walls; therefore, seismic strengthening of these elements is not considered necessary. However, in-place shear testing and confirmation of reinforcing will need to be completed to verify design assumptions used in our analysis. Unsatisfactory test results would warrant strengthening which could take the form of casting new shotcrete walls and/or adding new shear connector plates between the concrete frames and brick infill.
- There is evidence of light to moderate rust corrosion of the steel framed church steeple. Of particular concern are rusted base plate connections which may have sustained a loss of strength capacity. Structural rehabilitation of the steeple structure is likely warranted. Rehabilitation work will include cleaning and protecting structural steel elements and completing localized member replacement or repair. Additionally, new base connections will likely be required at each leg of the steeple (6 total). Each new base connection will consist of a steel base plate that is welded to the existing steeple column and anchored to the existing concrete platform with new threaded rods set in epoxy. The rehabilitation work will require the removal and replacement of the existing sheet metal steeple cladding in order to gain access to the concealed structural members.
- The existing ceilings are constructed with plaster over regularly spaced wood ceiling joists. The heavy plaster ceilings add a significant weight to the overall building mass. While not required, removal of the existing plaster ceilings and replacement with lightweight materials would reduce the overall building weight and resulting seismic design force.

SUMMARY OF FINDINGS

As detailed above, the detailed structural analysis shows that the existing building ***does not*** meet the *Life-Safety* provisions of ASCE 41-06 for an expected scenario earthquake, and significant structural strengthening of key structural components would be required to reduce the life-safety hazard.

Schematic structural plans and details of the proposed seismic strengthening are attached to this report. The plans and details are preliminary and sufficient for rough order-of-magnitude cost estimating and are not meant to be a complete package for construction. Refinement of the structural design and additional structural detailing will be required to produce construction drawings. Development of the final seismic strengthening design concept will require destructive testing of the building materials to determine actual material properties and to uncover hidden conditions. It should be noted that the attached plans and details do not

include additional structural modifications that may be required to convert the building into a library branch office and/or other future tenant improvements.

Although it is considered structurally feasible to strengthen the existing building to satisfy Long Beach City ordinances, State of California Code of Regulations, and the *Life-Safety* provisions of ASCE 41-06, the resulting retrofit building would not meet current building code (2007 California Building Code) requirements for new construction and would have increased vulnerability to structural and non-structural earthquake damage compared to a similar, newly constructed building. Stated another way, there is a low probability that the retrofit building would collapse during a code-level earthquake but a moderate to high probability that the building would sustain heavy structural damage – on the order of 20 to 30 percent of the building replacement value. The expected level of earthquake damage to the retrofit building could result in a lengthy building closure and possible ultimate building demolition. It is our opinion that the cost to retrofit the building to satisfy 2007 California Building Code requirements for newly constructed buildings, and to assure structural performance similar to a newly constructed building, would be cost prohibitive.

We trust this provides the information you require. Our office would be pleased to assist you in development of structural remodel drawings. Please do not hesitate to contact our office if you have any questions regarding the above findings or if we may provide any additional assistance.

Sincerely,

Eric Berkes, P.E., CA C70361
Project Engineer

Brad E. Ferris, S.E., CA S4640
Partner

APPENDIX A
PHOTOGRAPHS

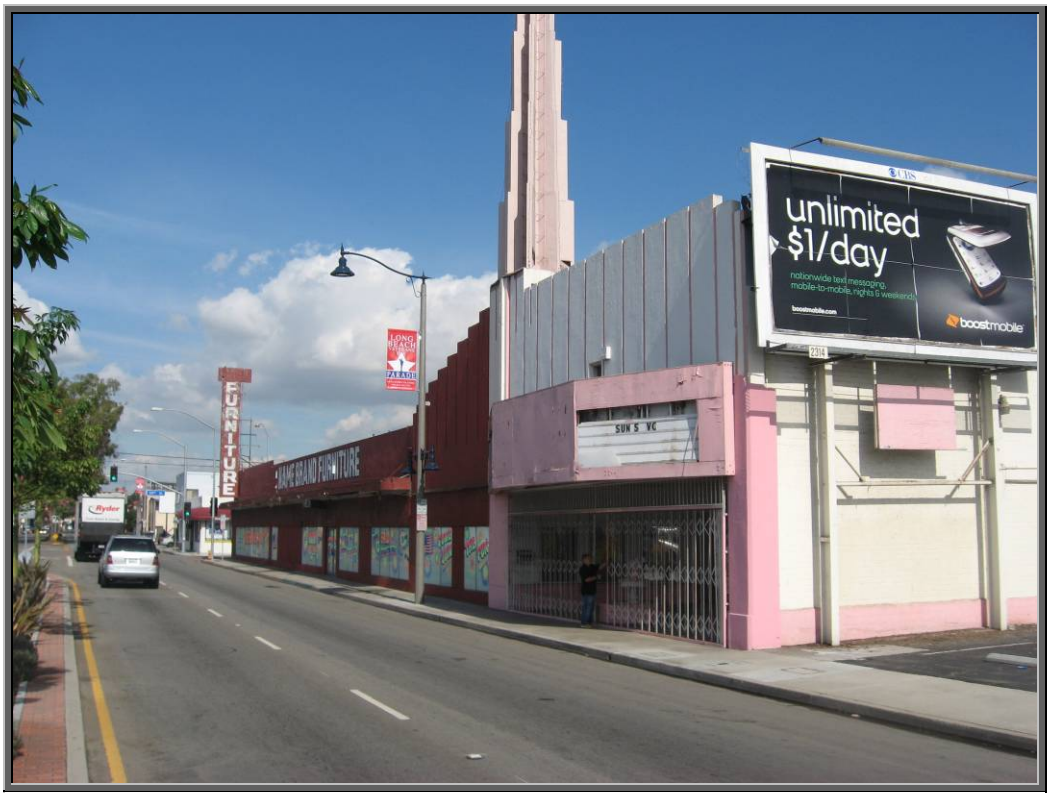


Photo 1: *West (Storefront elevation).*

Photo 2: *Typical brick infilled concrete frame.*

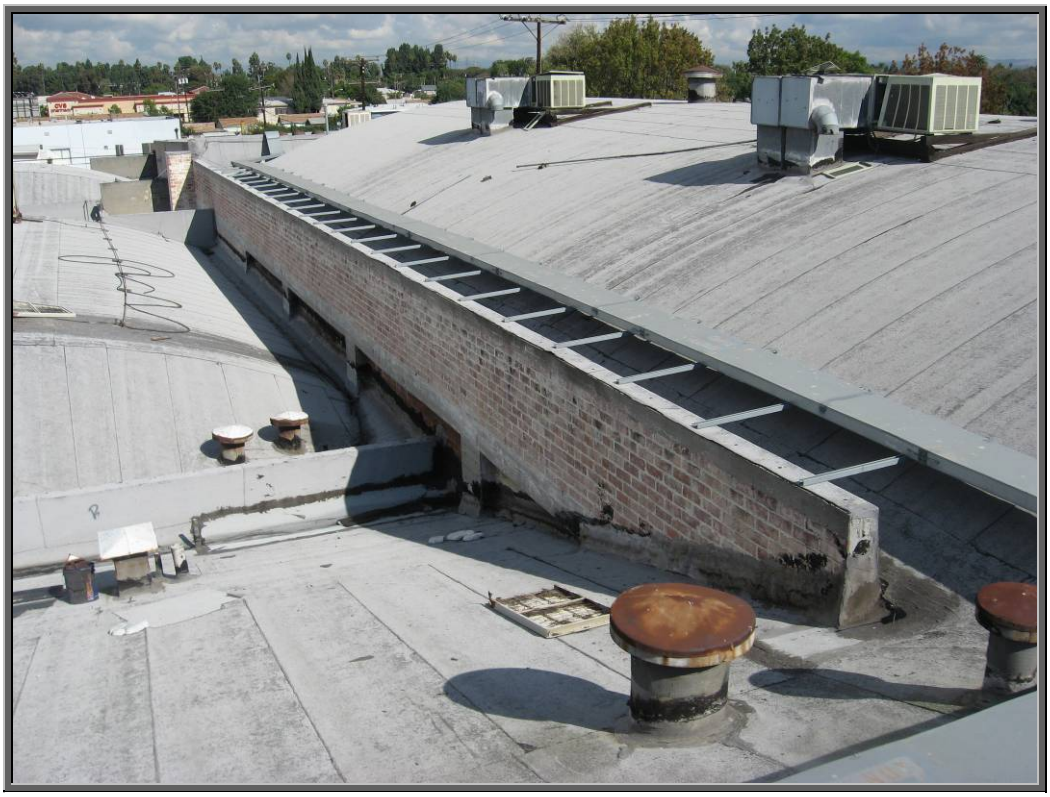


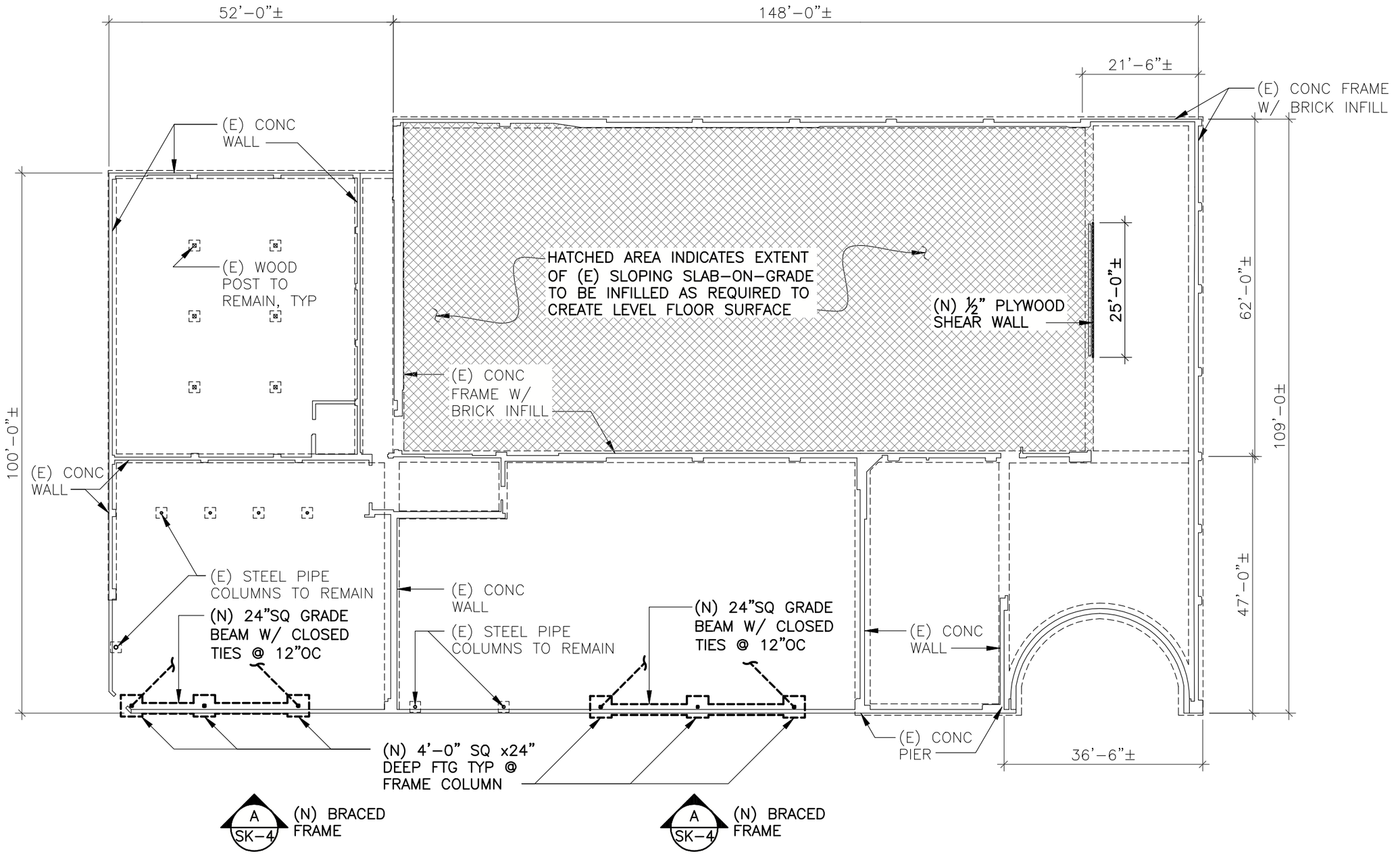
Photo 3: *Roof overview.*

Photo 4: *Typical diagonal roof sheathing.*

Photo 5: *Typical strengthened bowstring truss.*

Photo 6: *Typical plaster ceiling system.*

Photo 7: *Church steeple.*



FOUNDATION PLAN

SCALE: 1" = 20'

MHP STRUCTURAL ENGINEERS
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Long Beach, CA 90804
562.985.7200 P
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STRUCTURAL/SEISMIC FEASABILITY STUDY

5870-5874 ATLANTIC AVE.
LONG BEACH, CA, 90805

REVISIONS
NO. | DESCRIPTION | DATE

ENGINEER'S STAMP

SHEET DATE:	11–26–2008
SCALE:	AS NOTED
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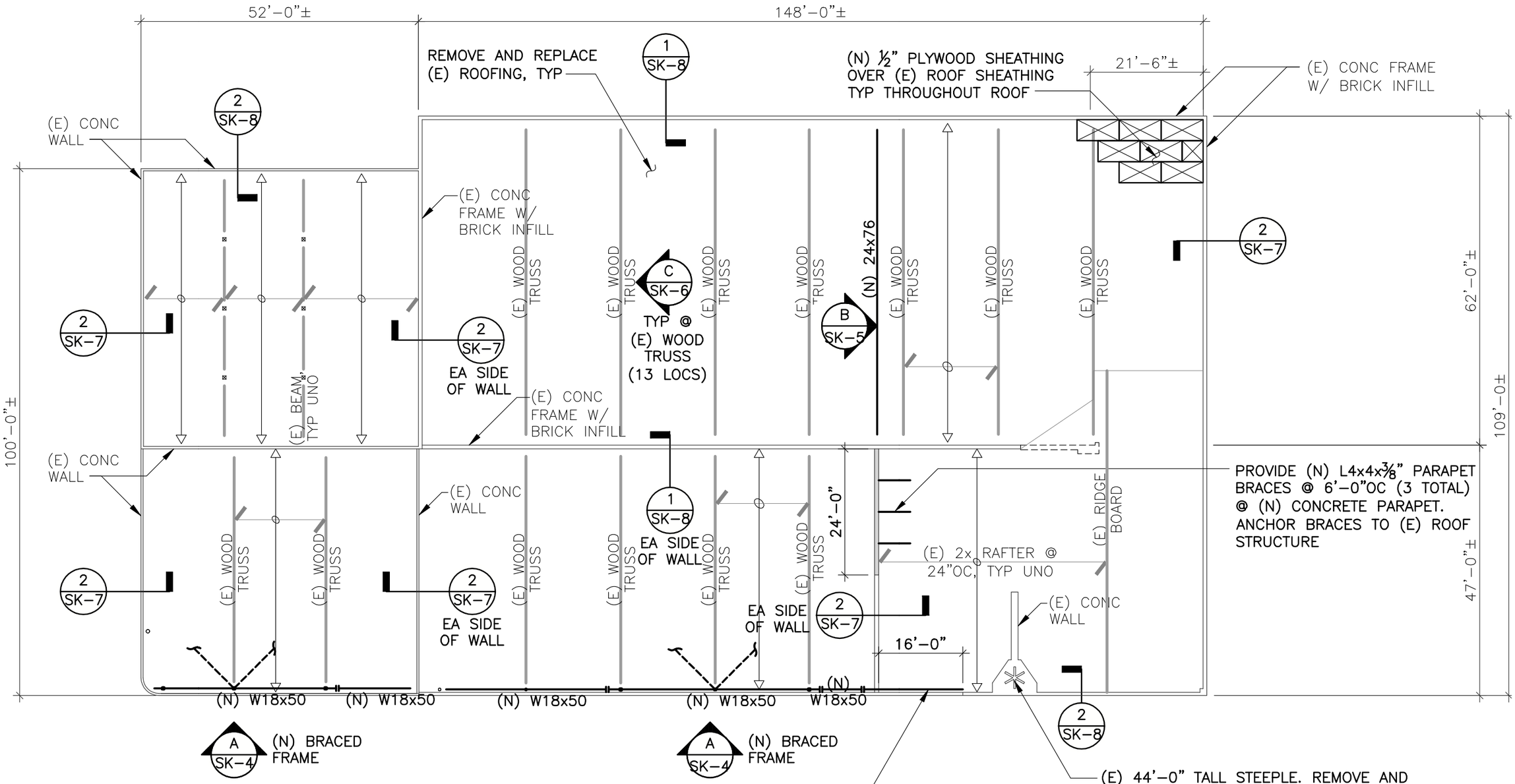
DESIGNED:	EB
CHECKED:	EB

SHEET NUMBER

SK-1

08–0472–002



ROOF PLAN

SCALE: 1" = 20'

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4500 E. Pacific Coast Hwy.
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Long Beach, CA 90804
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STRUCTURAL/SEISMIC FEASABILITY STUDY

5870-5874 ATLANTIC AVE.
LONG BEACH, CA, 90805

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SHEET NUMBER
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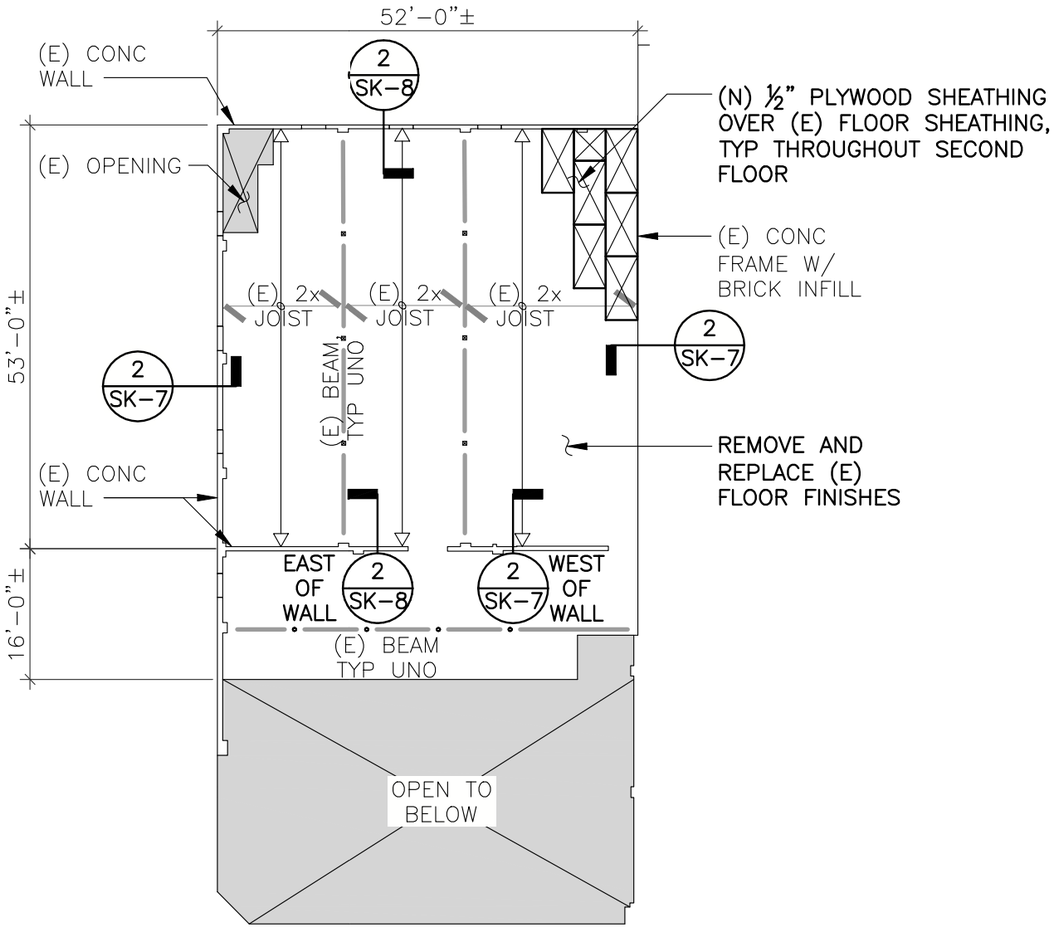
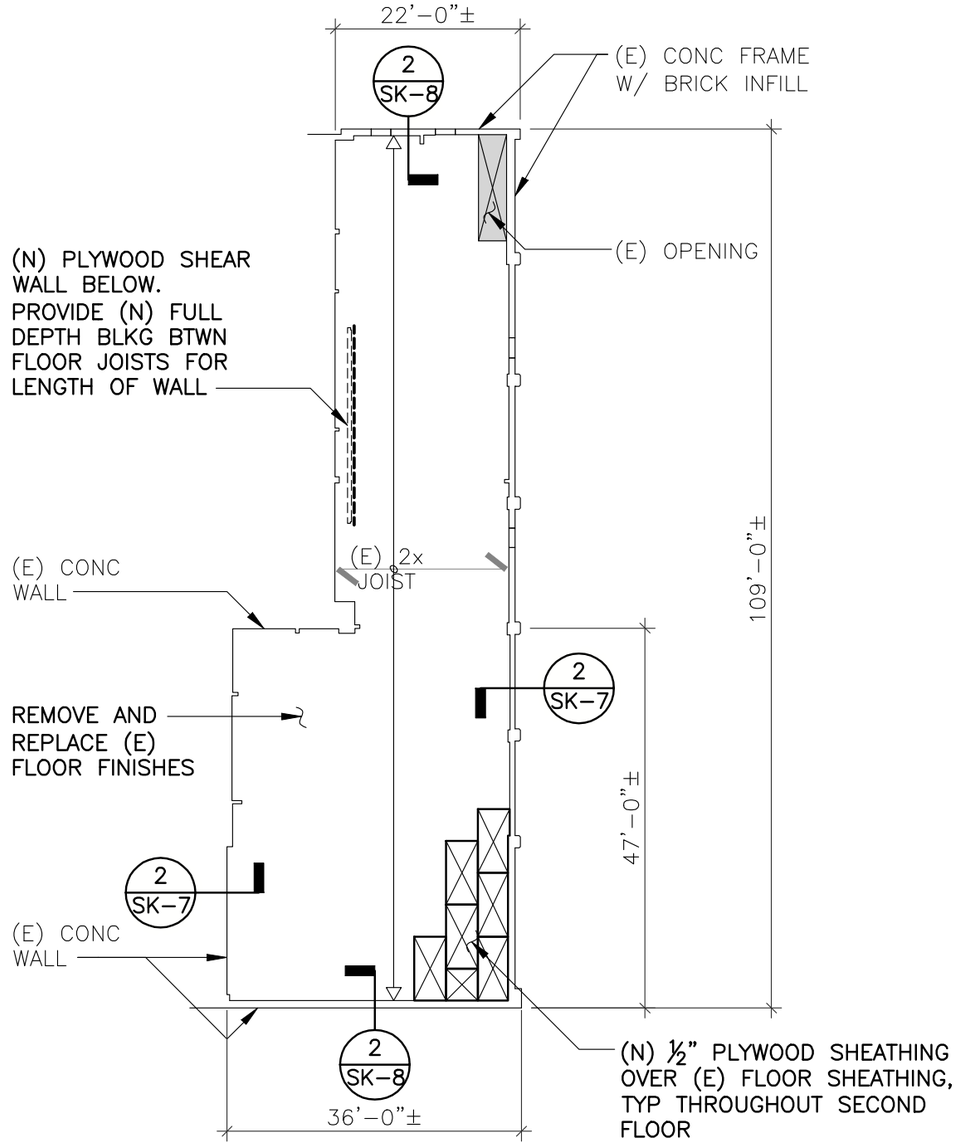
08-0472-002





SECOND FLOOR PLAN

SCALE: 1" = 20'

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STRUCTURAL/SEISMIC FEASABILITY STUDY

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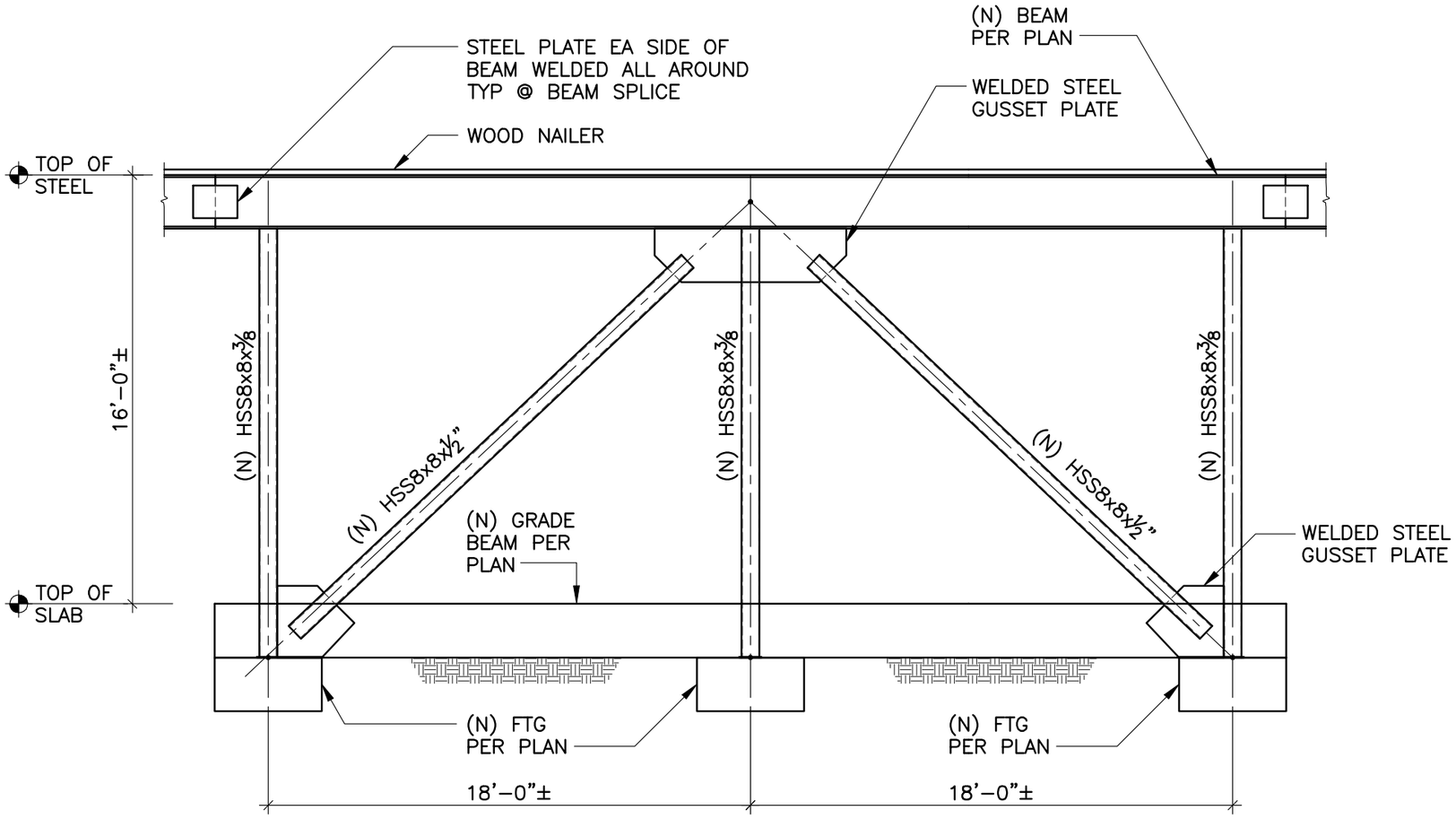

TYPICAL BRACED FRAME ELEVATION

SCALE: 3/16" = 1'-0"

A
SK-4

MHP
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4500 E. Pacific Coast Hwy.
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STRUCTURAL/SEISMIC FEASABILITY STUDY

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LONG BEACH, CA, 90805

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DRAWN:	AM
DESIGNED:	EB
CHECKED:	EB

SHEET NUMBER
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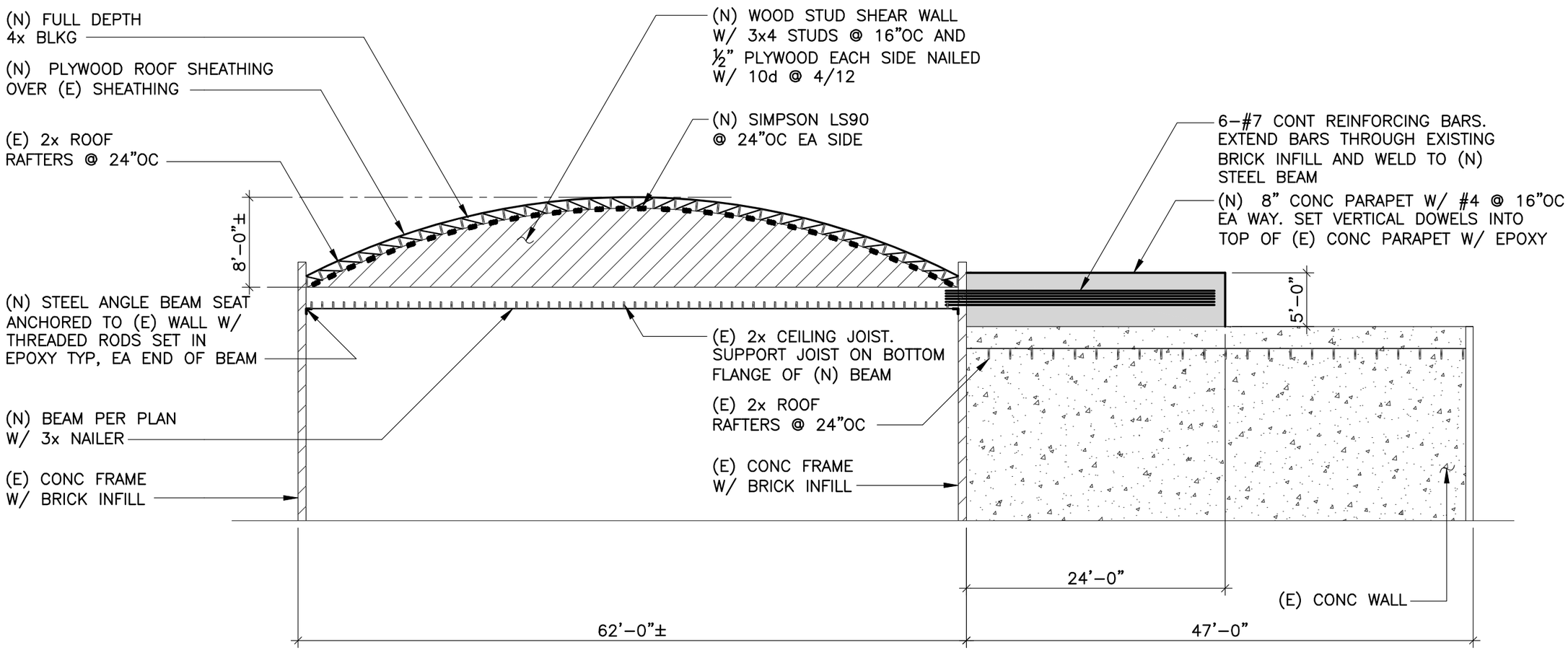
08-0472-002



NEW SHEARWALL ELEVATION

SCALE: 3/32" = 1'-0"

B
SK-5

MHP
STRUCTURAL ENGINEERS
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Suite 100
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562.985.1011 F

STRUCTURAL/SEISMIC FEASABILITY STUDY

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SHEET DATE:	11-26-2008
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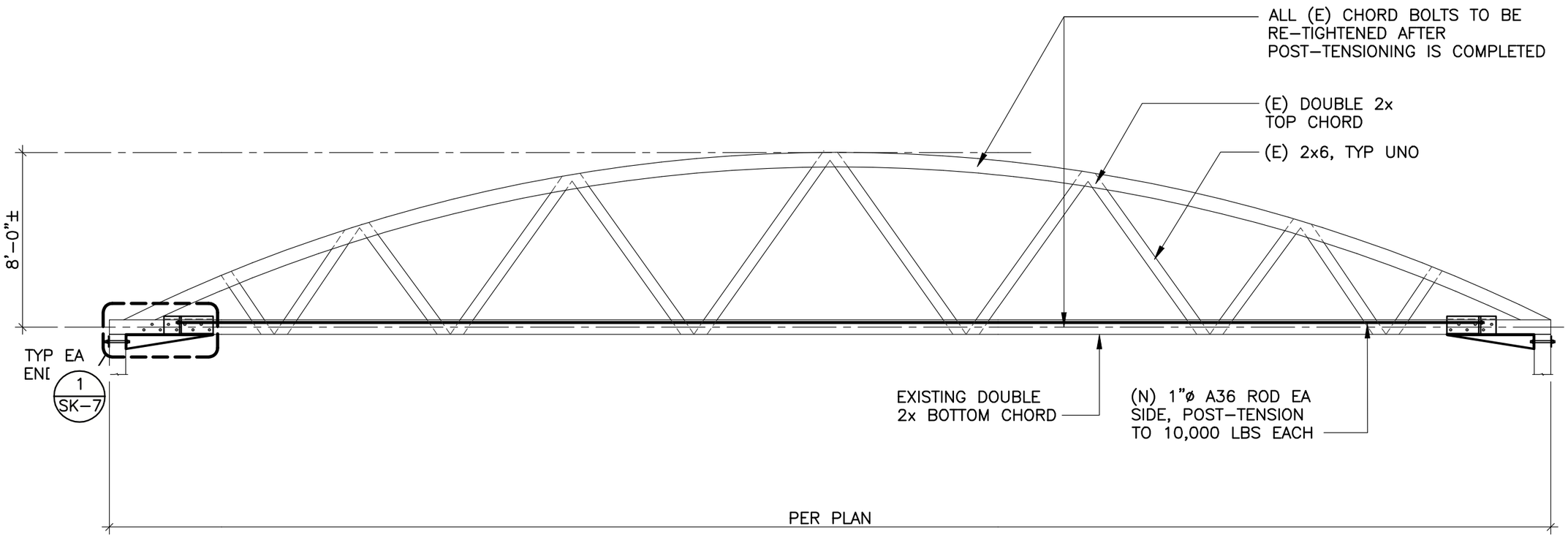
08-0472-002



TYPICAL TRUSS ELEVATION

SCALE: 3/16" = 1'–0"

C
SK–6

MHP
STRUCTURAL ENGINEERS
4500 E. Pacific Coast Hwy.
Suite 100
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562.985.3201 P
562.985.1011 F

STRUCTURAL/SEISMIC FEASABILITY STUDY

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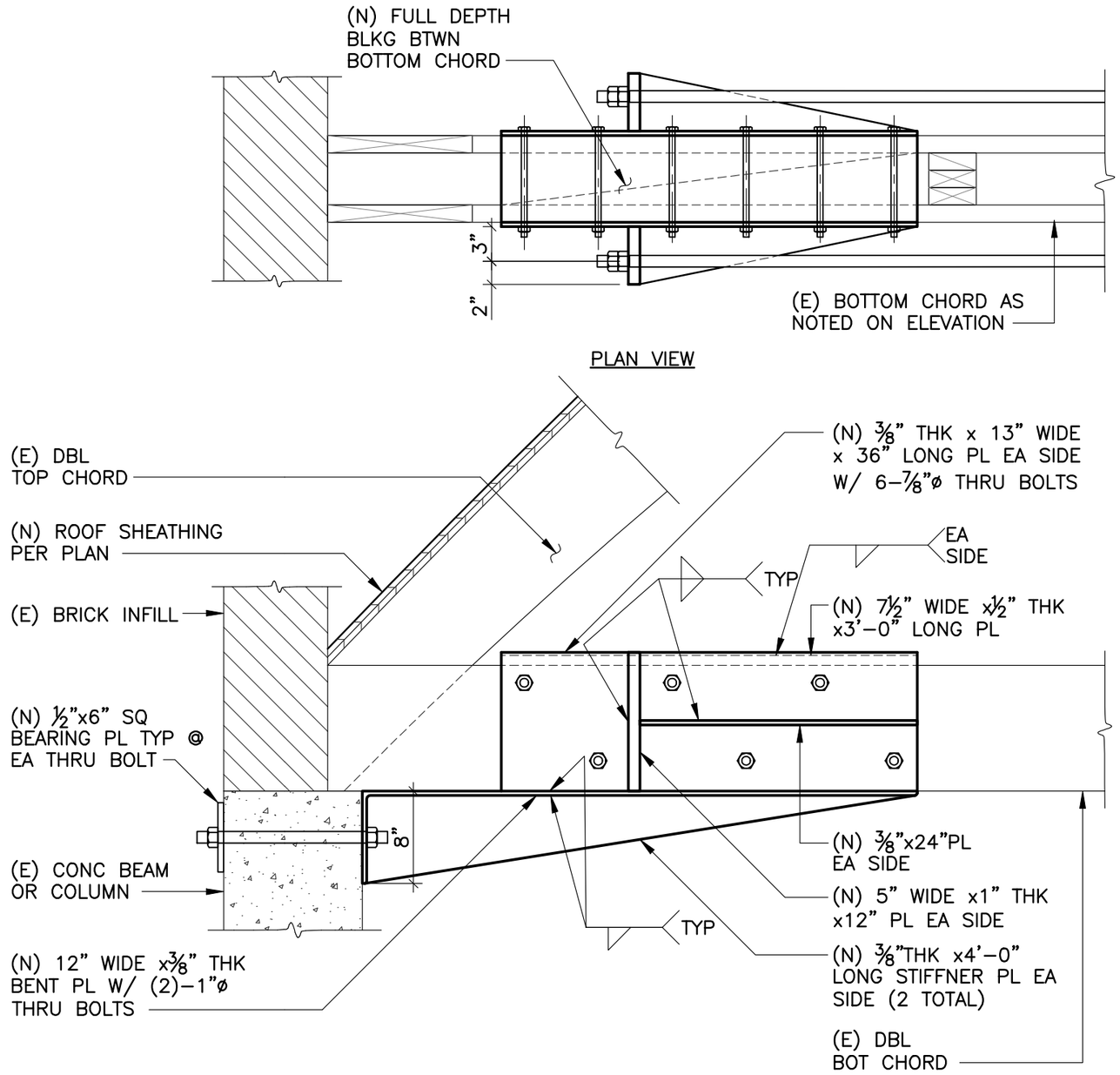
ENGINEER'S STAMP

SHEET DATE:	11–26–2008
SCALE:	AS NOTED
DRAWN:	AM
DESIGNED:	EB
CHECKED:	EB

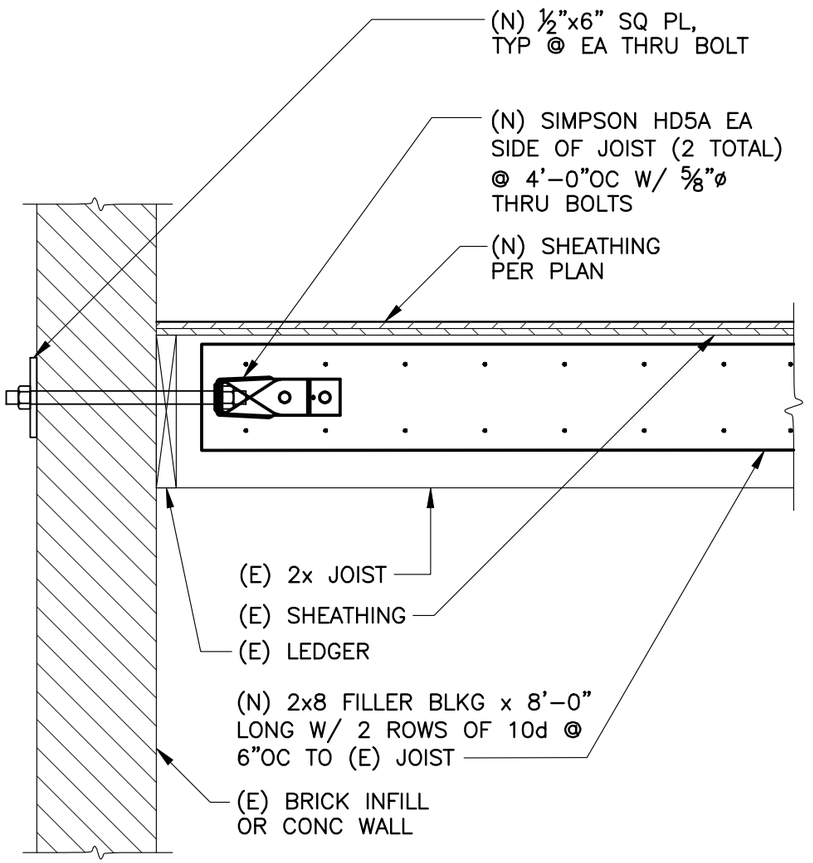
SHEET NUMBER
SK-6
08–0472–002



HEEL STRENGTHENING DETAIL

SCALE: 1" = 1'–0"

1 / SK-7



DETAIL

SCALE: 1' = 1'–0"

2 / SK-7

MHP
STRUCTURAL ENGINEERS
4500 E. Pacific Coast Hwy.
Suite 100
Long Beach, CA 90804
562.985.1200 P
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STRUCTURAL/SEISMIC FEASABILITY STUDY

5870-5874 ATLANTIC AVE.
LONG BEACH, CA, 90805

REVISIONS

NO.	DESCRIPTION	DATE

ENGINEER'S STAMP

SHEET DATE:	11–26–2008
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SHEET NUMBER

SK-7

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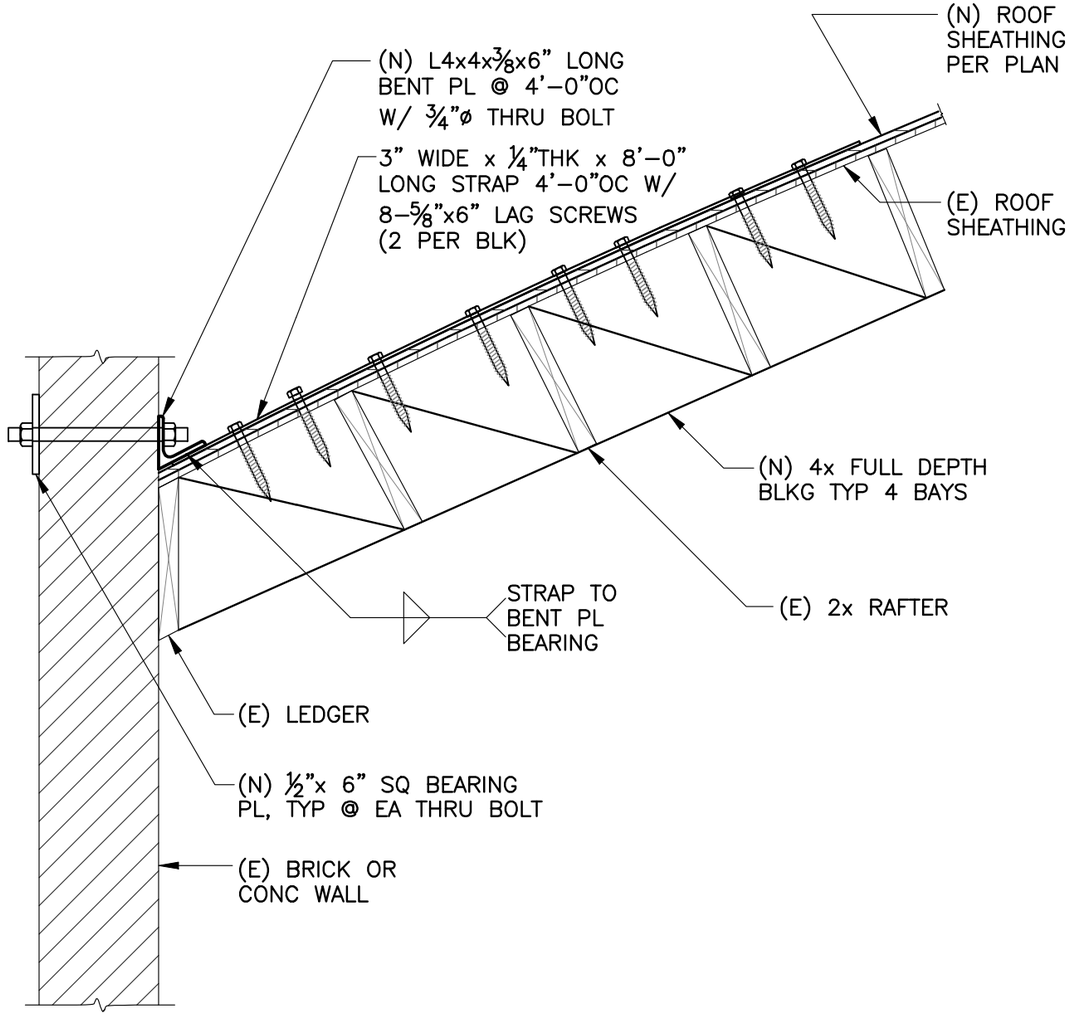
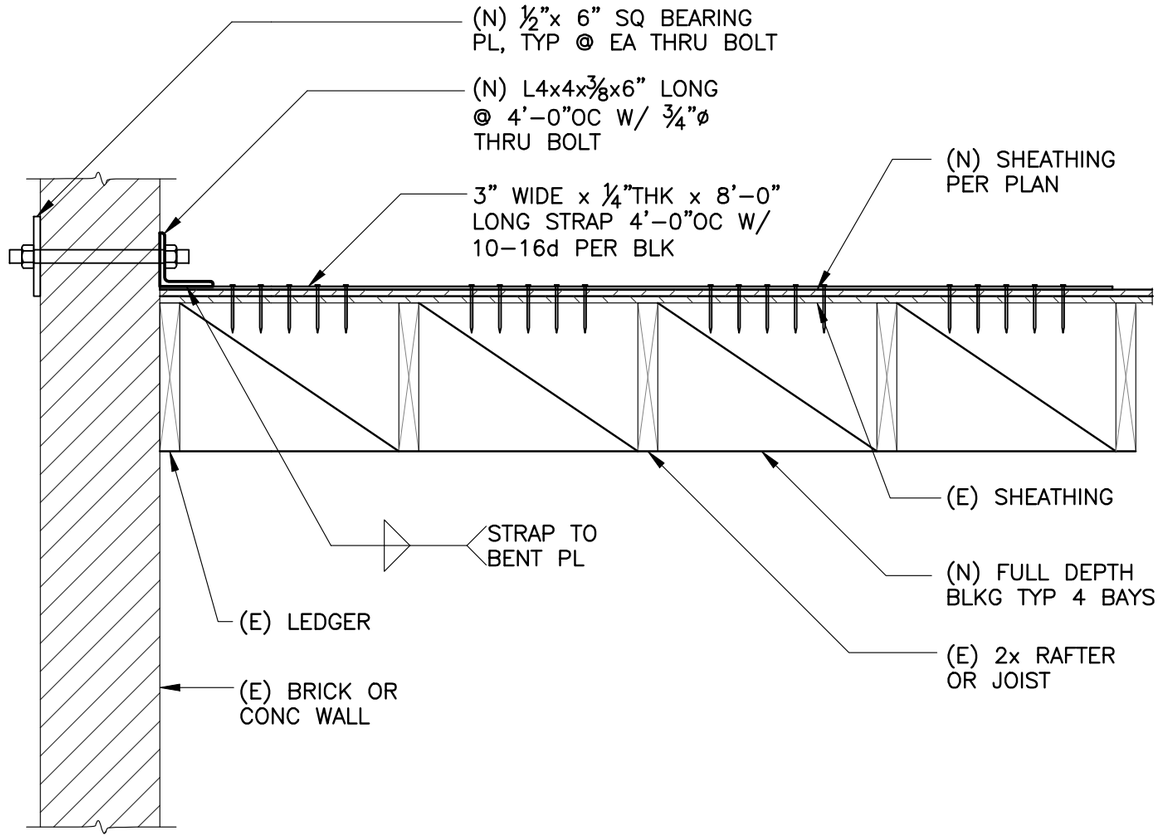


DETAIL 1 / SK-8

SCALE: 1' = 1'–0"



DETAIL 2 / SK-8

SCALE: 1' = 1'–0"

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5870-5874 ATLANTIC AVE.
LONG BEACH, CA, 90805

REVISIONS

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DESIGNED:	EB
CHECKED:	EB

SHEET NUMBER

SK-8

08–0472–002

FEASIBILITY STUDY
COST PLAN

for

Adaptive Reuse Study
The City of Long Beach Redevelopment Agency
Long Beach, California

DAVIS LANGDON

December 17, 2008

FEASIBILITY STUDY COST PLAN

for

Adaptive Reuse Study
The City of Long Beach Redevelopment Agency
Long Beach, California

Building Analytics
502 South Verdugo Drive
Suite 200
Burbank, California 91502

Tel: (818) 841-2575
Fax: (818) 841-2576

December 17, 2008

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CONTENTS

BASIS OF COST PLAN

Cost Plan Prepared From	Dated	Received
Drawings issued for		
Architectural		
Existing plans and sections (A101 - A103, A301)	Undated	12/01/08
Structural		
SK1 - SK8	11/26/08	12/09/08
Property Condition Assessment Report	Dec 2008	12/01/08
StructuralSeismic Feasibility Study	12/02/08	12/09/08
Discussions with the Project Architect and Engineers		

Conditions of Construction

The pricing is based on the following general conditions of construction

The general contract will be competitively bid with qualified general and main subcontractors

There will not be small business set aside requirements

The contractor will be required to pay prevailing wages

There are no phasing requirements

The general contractor will have full access to the site during normal working hours

INCLUSIONS

The project consists of a feasibility study for adaptive reuse of an existing vacant building of approximately 28,529 gross square feet into a new branch library for the City of Long Beach.

This report identifies approximate construction costs associated with the adaptive reuse based on the following documents and planning assumptions:

1. Property assessment report prepared by Building Analytics which identifies existing building and site conditions and deficiencies.

2. Structural/seismic report prepared by MHP Structural Engineers which identifies required structural improvements to the existing structure to meet current seismic code requirements.

3. Cost planning assumptions prepared by Davis Langdon for building systems applicable to typical library buildings relative to function and quality.

It should be noted that for cost planning purposes it has been assumed that the existing building configuration will remain unchanged relative to first and second floor space, all interior spaces will be gutted and completely renovated with new partitions and doors, finishes, fixed building accessories and equipment, MEP and fire sprinkler systems, and a new elevator will be added for second floor access. The existing exterior facades will be refinished and new windows and doors will be provided, The roof will be replaced with a new membrane roof and rigid insulation.

The cost report excludes potential additional construction costs associated with the following items which should be verified from a risk management standpoint since they would impact the overall required level of funding needed :

1. Additional building floor area beyond the existing 28,529 gross square feet.
2. Structural work based on change-of-use (ie floor strengthening for library shelving loads).
3. Major modifications to existing exterior facades (ie new window openings),
4. Site improvements beyond adjacent parking lot (ie development of vacant lot behind building)
5. Work to existing sidewalks.

In addition to the items above, typical project soft costs as identified on page 4 will need to be included in the overall project budget, together with allowances for potential cost escalation to start of construction date.

INCLUSIONS

BIDDING PROCESS - MARKET CONDITIONS

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other work not covered in the drawings or specifications, as stated within this document. Unit rates have been obtained from historical records and/or discussion with contractors. The unit rates reflect current bid costs in the area. All unit rates relevant to subcontractor work include the subcontractors overhead and profit unless otherwise stated. The mark-ups cover the costs of field overhead, home office overhead and profit and range from 15% to 25% of the cost for a particular item of work.

Pricing reflects probable construction costs obtainable in the project locality on the date of this statement of probable costs. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors and general contractors, with a minimum of 3 bidders for all items of subcontracted work and 4-5 general contractor bids. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Davis Langdon has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, the statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents Davis Langdon's best judgement as professional construction consultant familiar with the construction industry. However, Davis Langdon cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

EXCLUSIONS

Design, testing, inspection or construction management fees

Architectural and design fees

Scope change and post contract contingencies

Assessments, taxes, finance, legal and development charges

Environmental impact mitigation

Builder's risk, project wrap-up and other owner provided insurance program

Land and easement acquisition

Cost escalation

Owner supplied and installed furniture, fixtures and equipment

Loose furniture and equipment except as specifically identified

Telephone and data cabling and equipment

Security equipment and devices

Audio visual equipment

Hazardous material handling, disposal and abatement

Compression of schedule, premium or shift work, and restrictions on the contractor's working hours

Library shelving

Increases in building floor area

Work to vacant lot behind building

OVERALL SUMMARY

	Gross Floor Area	$ / SF	$x1,000
Existing Building Renovation	28,529 SF	284.82	8,126
Sitework			483
TOTAL Building & Sitework Construction	*December 2008*		*8,609*

Please refer to the Inclusions and Exclusions sections of this report

EXISTING BUILDING RENOVATION AREAS & CONTROL QUANTITIES

Areas

	SF	SF	SF
Enclosed Areas			
Existing Building Renovation	28,529		
SUBTOTAL, Enclosed Area		28,529	
Covered area			
SUBTOTAL, Covered Area @ ½ Value			
TOTAL GROSS FLOOR AREA			28,529

Control Quantities

				Ratio to Gross Area
Number of stories (x1,000)		2	EA	0.070
Gross Area		28,529	SF	1.000
Enclosed Area		28,529	SF	1.000
Footprint Area		21,180	SF	0.742
Gross Wall Area		19,290	SF	0.676
Finished Wall Area		19,290	SF	0.676
Windows or Glazing Area	15.00%	2,894	SF	0.101
Roof Area - Total		21,180	SF	0.742
Finished Area		28,529	SF	1.000
Elevators (x10,000)		1	EA	0.351
Total Site Area		41,688	SF	1.461
Finished Site Areas		20,508	SF	0.719

EXISTING BUILDING RENOVATION COMPONENT SUMMARY

Gross Area: 28,529 SF

		$/SF	$x1,000
1. Foundations		1.77	51
2. Vertical Structure		4.74	135
3. Floor & Roof Structures		24.64	703
4. Exterior Cladding		20.56	587
5. Roofing, Waterproofing & Skylights		10.88	310
Shell (1-5)		62.58	1,785
6. Interior Partitions, Doors & Glazing		25.00	713
7. Floor, Wall & Ceiling Finishes		21.25	606
Interiors (6-7)		46.25	1,320
8. Function Equipment & Specialties		11.98	342
9. Stairs & Vertical Transportation		4.14	118
Equipment & Vertical Transportation (8-9)		16.12	460
10. Plumbing Systems		9.00	257
11. Heating, Ventilating & Air Conditioning		35.00	999
12. Electric Lighting, Power & Communications		35.00	999
13. Fire Protection Systems		6.00	171
Mechanical & Electrical (10-13)		85.00	2,425
Total Building Construction (1-13)		209.95	5,990
14. Site Preparation & Demolition		6.52	186
15. Site Paving, Structures & Landscaping		0.00	0
16. Utilities on Site		0.00	0
Total Site Construction (14-16)		6.52	186
TOTAL BUILDING & SITE (1-16)		216.47	6,176
General Conditions	10.00%	21.66	618
Contractor's Overhead & Profit or Fee	4.00%	9.53	272
PLANNED CONSTRUCTION COST	*December 2008*	247.66	7,066
Contingency for Development of Design	15.00%	37.16	1,060
RECOMMENDED BUDGET	*December 2008*	284.82	8,126

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
1. Foundations				
Reinforced concrete including excavation				
New column footings	7	CY	1,500.00	10,500
New grade beams	11	CY	1,500.00	16,500
Elevator pit	1	EA	8,500.00	8,500
Work to existing foundation systems	1	LS	5,000.00	5,000
Temporary shoring/underpinning of existing structure	1	LS	10,000.00	10,000
				50,500
2. Vertical Structure				
Shear bracing				
New structural steel columns	6	T	5,000.00	30,000
New plywood shear wall	697	SF	25.00	17,425
New reinforced concrete parapet wall, 8" thick	120	SF	60.00	7,200
Work to existing brick infill concrete frames - allowance pending further testing	1	LS	25,000.00	25,000
Fireproofing steelwork				
Sprayed fireproofing on steelwork	6	T	325.00	1,950
Miscellaneous				
Remove, repair and reinstall existing steel steeple	1	LS	25,000.00	25,000
Miscellaneous structural work	28,529	SF	1.00	28,529
				135,104
3. Floor and Roof Structure				
Floor at lowest level				
Infill and level existing concrete slab on grade	7,500	SF	10.00	75,000
Patch and repair existing concrete slab on grade	13,680	SF	2.50	34,200

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Suspended floors				
New wall anchorage connections	400	LF	75.00	30,000
Miscellaneous blocking and framing	7,349	SF	1.50	11,024
New plywood sheathing over existing sheathing	7,349	SF	4.00	29,396
Flat roofs				
New structural steel beams	11	T	5,000.00	55,000
New roof anchorage connections	1,300	LF	75.00	97,500
Strengthening of existing wood trusses	13	EA	7,500.00	97,500
Miscellaneous blocking and framing	21,180	SF	2.00	42,360
New plywood sheathing over existing sheathing	21,180	SF	4.00	84,720
Fireproofing steelwork				
Sprayed fireproofing on steelwork	11	T	325.00	3,575
Miscellaneous				
Miscellaneous structural work	28,529	SF	2.50	71,323
Miscellaneous metals and support framing	28,529	SF	2.50	71,323
				702,920

4. Exterior Cladding

Applied exterior finishes				
Clean, repair, refinish exterior wall surfaces	16,396	SF	10.00	163,960
Interior finish to exterior walls				
New gypsum board lining with paint finish	16,396	SF	4.00	65,584
Windows, glazing and louvers				
Replace exterior windows and storefronts with new aluminum framed insulated glass units	2,894	SF	75.00	217,050
Exterior doors, frames and hardware				
Replace exterior doors with new aluminum glazed entry doors and steel exit doors	1	LS	40,000.00	40,000

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Fascias, bands, screens and trim				
Canopies, sunshading systems, miscellaneous architectural detailing	1	LS	50,000.00	50,000
Miscellaneous				
Modifications to existing walls - new door/window openings	1	LS	50,000.00	50,000
				586,594

5. Roofing, Waterproofing & Skylights

Waterproofing				
Waterproofing to elevator pit	1	EA	1,250.00	1,250
Insulation				
New rigid insulation under roofing	21,180	SF	3.50	74,130
Roofing				
Membrane roofing (sarnafil)	21,180	SF	8.00	169,440
Roof or deck traffic surfaces				
Walkway pads	1	LS	2,500.00	2,500
Roofing upstands and sheetmetal				
Membrane flashings, metal parapet caps, miscellaneous sheetmetal work	1	LS	35,000.00	35,000
Roof access and ventilation				
New roof access hatch and ladder	1	LS	3,000.00	3,000
Caulking and sealants				
Miscellaneous caulking and sealants	1	LS	25,000.00	25,000
				310,320

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
6. Interior Partitions, Doors & Glazing				
Partitions and doors				
New metal stud partitions with batt insulation and painted gypsum board lining, interior glazing, wood doors in hollow metal frames	28,529	SF	25.00	713,225
				713,225
7. Floor, Wall & Ceiling Finishes				
Floor finishes				
Carpet, sheet vinyl, vinyl composition tile, ceramic tile in restrooms	28,529	SF	6.00	171,174
Bases				
Resilient rubber, wood, ceramic tile in restrooms	28,529	SF	1.00	28,529
Walls				
Acoustic wall panels, ceramic tile in restrooms	28,529	SF	5.00	142,645
Ceilings				
Suspended acoustic tile, painted gypsum board, bulkheads and fascias	28,529	SF	7.50	213,968
Miscellaneous				
Special finishes at lobbies and public areas	1	LS	50,000.00	50,000
				606,316
8. Function Equipment & Specialties				
General building equipment				
Toilet partitions and fixed restroom accessories, markerboards and tackboards, fire extinguisher cabinets, interior signage, window blinds	28,529	SF	4.00	114,116

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Shelving and millwork				
Storage shelving, reception/information counters	1	LS	25,000.00	25,000
Cabinets and countertops				
Built-in cabinets and countertops	28,529	SF	5.00	142,645
Light control and vision equipment				
Projection screens	1	LS	10,000.00	10,000
Special use equipment				
Book detection systems, book depository, miscellaneous fixed equipment	1	LS	50,000.00	50,000
				341,761

9. Stairs & Vertical Transportation

Staircase flights, floor to floor				
New single flight stairs and railings	2	FLT	20,000.00	40,000
Ladders and fire escapes				
Metal access ladders	1	LS	3,000.00	3,000
Elevators				
Hydraulic, passenger, two-stop	1	EA	75,000.00	75,000
				118,000

10. Plumbing Systems

Plumbing systems				
New plumbing systems including sanitary fixtures and associated pipework, water heating equipment, gas distribution, overflow drainage system	28,529	SF	9.00	256,761
				256,761

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
11. Heating, Ventilation & Air Conditioning				
Heating, ventilation and air conditioning systems				
New HVAC systems including heating and cooling equipment and distribution, air handling units and air distribution systems, diffusers, registers and grilles, building controls, unit ventilation, testing and inspection	28,529	SF	35.00	998,515
				998,515
12. Electrical Lighting, Power & Communication				
Electrical systems				
New electrical systems including main service and distribution, emergency power, machine, equipment and user convenience power, lighting and lighting controls, telephone and data (conduit only), fire alarm and security (conduit only)	28,529	SF	35.00	998,515
				998,515
13. Fire Protection Systems				
Fire protection systems				
New automatic wet sprinkler system	28,529	SF	6.00	171,174
				171,174
14. Site Preparation & Building Demolition				
Selective building demolition				
Remove existing exterior windows and doors	1	LS	15,000.00	15,000
Remove existing roof membrane and insulation	21,180	SF	1.50	31,770
Remove existing interior finishes, fixtures, MEP systems	28,529	SF	4.00	114,116
Miscellaneous demolition work	1	LS	25,000.00	25,000
				185,886

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
15. Site Paving, Structures & Landscaping				
				0
16. Utilities on Site				
				0

SITEWORK COMPONENT SUMMARY

		Gross Area: 41,688 SF	
		$/SF	$x1,000
14. Site Preparation & Demolition		0.74	31
15. Site Paving, Structures & Landscaping		4.47	187
16. Utilities on Site		3.60	150
TOTAL BUILDING & SITE (1-16)		8.81	367
General Conditions	10.00%	0.89	37
Contractor's Overhead & Profit or Fee	4.00%	0.38	16
PLANNED CONSTRUCTION COST	*December 2008*	10.08	420
Contingency for Development of Design	15.00%	1.51	63
RECOMMENDED BUDGET	*December 2008*	11.59	483

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
14. Site Preparation & Building Demolition				
Site clearing and grading				
General site clearing and rough grading	20,508	SF	1.50	30,762
				30,762
15. Site Paving, Structures & Landscaping				
Paving and landscaping				
New parking lot, including asphalt paving, striping, storm drainage and lighting	18,000	SF	8.00	144,000
Landscaping, including irrigation	2,508	SF	6.00	15,048
Trees	10	EA	750.00	7,500
Miscellaneous				
Site signage and fencing	1	LS	20,000.00	20,000
				186,548
16. Utilities on Site				
Site utilities				
Incoming utility connections to building	1	LS	150,000.00	150,000
				150,000