

RIVERSIDE LIBRARY

Riverside Library of the Fort Worth Library located in east Fort Worth. The building occupies a good location in a residential area north of Interstate 30 and east of Interstate 35W, 3.80 miles from the Central Library.

Official Name: The Riverside Library

Building Address: 2913 Yucca Avenue

Library Facility Code: RVS

Site Description

The building is situated on a landscaped lot of 0.66 acres, facing Yucca Avenue. The topography of the site slopes gently downward, from the public entrance toward the southeast. The primary maintenance responsibility for the site falls under the supervision of the City of Fort Worth Parks and Community Services Department. Routine maintenance includes cutting of the grass and landscaping around the building and parking lot. Drawing RVS -1 illustrates the site of Riverside Library (11" x 17" overleaf).

Architectural Description

Construction of the original building was completed in 1967 and significantly renovated in 2007. The facility appears to be well built and in good condition for its age. Drawing RVS-2 depicts the Ground Floor of Riverside Library (11" x 17" overleaf) and the square footage of each room of the building, as tabulated in Table A5.10.1.

Square Footage: There are currently 6,313 building gross square feet (bgsf), 5,306 net assignable square feet (nasf) within the facility. The library currently occupies the entire building. Table A5.10.1 contains a room-by-room square footage tabulation for the facility.

Evaluations for both public & staff spaces of the facility

Table A5.10.1

Existing Square Footage Tabulation, Room-by-Room, Riverside Library

Summary

	floor	net assignable square footage	building gross square footage	efficiency
100	Ground Floor	5,305.98	6,313.14	84.05%
TOTAL		5,305.98	6,313.14	84.05%

Ground Floor

room no.	room name	square footage net assignable	square footage building gross
101	Juvenile Reading	1,351.49	
102	Adult Reading	1,171.60	
103	Adult Reading	1,333.78	
104	Circulation Desk	315.17	
105	Staff Break Room	118.94	
106	Closet	12.66	
107	Kitchenette	36.60	
108	Staff Toilet		25.21
109	Librarian	130.77	
110	Staff Work Room	454.14	
111	Corridor		82.37
112	Mechanical Room		223.61
113	Vestibule	160.60	
114	Men's Toilet		75.62
115	Women's Toilet		99.14
116	Toilet		53.03
117	Foyer	220.23	
assigned rooms and spaces		5,305.98	
unassigned walls, pipe chases, etc.			1,007.16
TOTAL			6,313.14
EFFICIENCY			84.05%

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The T/PW facilities database attributes 8,197 bgsf to the Riverside Library, which is actually the square footage under roof, including the covered southeast exterior entrance, colonnades, and extensive roof overhangs, as well as all of the enclosed space.

Trade Area Population

The population within the 5-minute drive time trade area for the Riverside Library is 18,323, as determined by the Customer Analytics Consultants.

Driving Distance/Times to Other Libraries

Northside	3.85 miles	10 minutes
Central Library	3.80 miles	8 minutes

Demographics

Households with children	2,273
Persons age 17 and under	5,017
Persons age 18 to 64	11,155
Persons age 65+	2,151
Percent Hispanic	53.6%

Output Measures

The Library Consultants calculated a number of measurements of operating efficiency and their respective rankings among the 15 current FWL libraries, as summarized in Table A5.10.2.

Table A5.10.2

Output Measures, Riverside Library

<i>output</i>	<i>measure</i>	<i>ranking</i>
Contacts per capita	15.27	7 of 15
Cost efficiency per contact	\$1.63	8 of 15
Cost efficiency per SF to operate	\$80.68	10 of 15

Existing Facility Assessment

Collections

The current total collection size is 38,906. At 2.12 items per capita, the collection exceeds the minimum standard of 2.00 items per capita.

The responsiveness of collections to younger core customers reveals that the population under 17 years of age is 27.4 percent of the total, and the combined Children's/Teen collections are 41.5 percent of total. The library materials and services more likely to be utilized at Riverside are Spanish Materials, Juvenile DVDs, PC Logins, and Reference.

The space required to house the collections in an ADA/User-Friendly standard is 4,430 square feet, or 70.2% of the total building size.

Computers & Seating

Based on the per capita number of computers provided for the public, the Riverside Library, with 18, is well above "Basic" when compared to Texas State Library standards.

The current public seating ratio, including computers, at Riverside is one seat per 782 (1:782) collection items. This compares very favorably to the neighborhood library standard of 1:1,500 to 1:1,800 collection items.

Site & Building Capacity

Riverside Library currently provides 23 parking spaces on site. At just under 6,400 gross square feet, 32 parking spaces would be needed in order to meet the minimum standard of one space per 200 bgsf of building, as it is currently sized.

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Staff workspace is 11.02% of total net assignable square feet (nasf) of the building – a significant shortfall when compared to the minimum standard of 15% for buildings of up to 15,000 gross square feet. In terms of square footage, the shortfall equates to 211 nasf less than the minimum need of 796 nasf.

Table A5.10.3 compares the current capacity of the Riverside Library to the needed capacity based on the minimum space standards presented in Appendix Three.

Table A5.10.3

Site & Building Capacity, Riverside Library

<i>unit of capacity</i>	<i>current 2010</i>	<i>2010 need to standards</i>	<i>current vs. standards</i>
Net assignable square feet	5,306	8,679	61.1%
Building gross square feet	6,313	10,211	61.8%
Site area, in acres	0.66	0.94	70.2%
Parking spaces	23	51	45.1%

Growth Potential

Adaptability: The building is composed of open public spaces, with structural spans ranging from 40 feet east-to-west to 29 feet north-to-south. Changes to the configuration of the spaces appear to be feasible.

Expandability: Additions to the northwest and the southeast appear most feasible, using the land under the existing roof overhang for future horizontal expansion. Larger additions to the north and the west would require using the land of the existing parking lot (west) and loop drive (north). It is not conceivable that vertical expansion could be achieved, given a preliminary analysis of the roof structure.

Existing Facility Assessment

Technology Assessment

Historic computer usage at the Riverside Library is presented below for fiscal years 2007 through 2009. See Table A5.6.4 for PC logins, PC logins to library visits, and wi-fi connections.

Table A5.10.4

Historic Computer Usage, Riverside Library

<i>service item</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>
PC Logins	22,005	23,762	25,331
PC Logins to Visits Ratio	20.2%	19.1%	24.6%
Wi-Fi Connections	n/a	n/a	756

Computer Network: This is another building that was not designed for the heavy use of electrical and network devices required for the library today. Power poles have been added, with a few still available for use. Very few power outlets are available in the public area for Wi-Fi users although one power pole is available but no furniture is by it. Power and network cablings run through molding on the walls in the workroom. Wi-fi has been available at Riverside since January of 2009.

Public Computers: A summary of the distribution of public computers is provided in Table A5.10.5 below. Computer reservation stations and print release stations are not included in the Adult Services quantity.

Table A5.10.5

Public Computer Distribution, Riverside Library

<i>computer location</i>	<i>quantity</i>
Public Access Catalog (PAC)	4
Adult Services	13
Teen Services	0
Children's Services	1
TOTAL	18

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Of the 13 Internet computers provided, two are express computers with 15-minute limits. One early literacy computer is provided. No other computers are located in the Children's area, but two children, and sometimes two adults, often work together on one computer. Wait times after school are typically one - two hours. Relocating computers or adding more public computers may affect carpeting if the shelving would need to be moved as the carpeting was done around the shelving, not under it. Current placement of the computers does not allow staff to view all screens, which makes it difficult for staff to insure compliance with library policies. The older version of applications on the computers creates difficulties for customers and staff. A variety of furniture is used for the public computers, most of which is not ergonomically designed for this purpose. The one shared reservation and printing station provided is sufficient.

Public Technology: A television was installed in 2009. Customers do use the Wi-Fi service. Some sit on the floor in order to more easily access the power outlets. Customers have requested faxing service and scanners. No material security system is installed.

Computer Training: Classes are offered to the public when the library is closed three times a month. Classes are offered in Spanish, with an estimated five persons average per class.

Self-Service: No self-check is available.

Study Rooms & Meeting Spaces: No study rooms or separate meeting room exists. A projector screen does exist in the Children's area, but it is not used. The library does not have a data projector or DVD player.

Technology for Staff: A total of seven staff computers are provided. Two computers on the information desk are sufficient. Two computers are in the workroom and one in the Supervisor's

Existing Facility Assessment

office. Two computers are at the circulation desk, but staff believes that a third could be used. The outside book return returns materials directly into the building. The design of the space would allow for a small automated sorter to be installed, with some special design to the system to allow for the short distance between the existing return and the wall.

Site Improvements

G2010 Roadways: An asphalt loop drive connects the two parking lots. The pavement is cracked and is in need of repair. *composite rating: 2.*

G2020 Parking Lots. Striped asphalt parking lots for 23 cars, including three spaces reserved for the handicapped, are situated to the east and west of the building. The pavement is cracked and is in need of repair. Storm water drainage from paved parking areas is effective during moderate rains. *composite rating: 2.*

G2030 Pedestrian Paving. Handicapped access to the public entrances appears to provide an accessible route, as does the other egress point from the building. *composite rating: 3.*

G2040 Site Development. Lighting on the site uses metal halide lamps and appears adequate. One flag pole and one rack for 14 bikes are provided at the public entrance. *composite rating: 4.*

G2050 Landscaping. Large, mature live oak trees surround the building. Shrubs and flower beds are planted in the built-in brick planters on the south side of the building. *composite rating: 4.*

G3000 Site Utilities. Underground utilities which appear to be available at the site include water, sanitary sewer, and gas. Overhead utilities which appear to be available at the site include cable television, power, and telephone. *composite rating: 4.*

Substructure

A1010 Foundations: As indicated on the original construction drawings, the building utilizes a foundation comprised of steel-reinforced concrete grade beams supported by steel-reinforced concrete pier footings under the entire building, approximately 14 to 16 feet on center. No evidence of settlement was observed. *rating: 4.*

A1030 Slabs on Grade: Interior concrete floors are five and one-half-inch thick slab-on-grade type, reinforced with #4 and #5 re-bars, per the original construction drawings. No evidence of settlement was observed. *rating: 4.*

Building Shell/Exterior Envelope

B1020 Superstructure: The building's superstructure is comprised of load-bearing steel pipe columns, supporting steel beams and open-web steel joists supporting the roof deck. Ten-inch thick masonry walls provide lateral bracing around the perimeter. *rating: 4.*

B2010 Exterior Walls: The building uses a ten-inch-thick brick cavity wall filled with concrete, and backed by concrete masonry unit bearing walls in some locations. No insulation appears to have been provided within the exterior, as indicated on the original construction drawings. *rating: 4.*

B2020 Exterior Windows: Large window units are fixed, single-pane glass in aluminum frames. Vertical aluminum mullions, spanning top to bottom, have been added to reduce the size of glass panels and/or reinforce the original aluminum frames. *rating: 1.*

B2030 Exterior Doors: The two sets of entrance doors are aluminum with vision glass, which does not appear to be tempered. The other two exterior doors in the building are hollow metal in hollow metal frames. *rating: 1.*

B3010 Roofing: The roof of the building is primarily flat, utilizing a two-ply modified bituminous/thermoplastic membrane roofing system, according to the T/PW database. The substrate material under the roofing membrane is gypsum decking, as indicated on the original construction drawings. The construction drawings also indicate the original building had several skylights at the center of the roof, which have apparently been covered with the lay-in acoustical ceiling. Any roof leaks that developed over the years appear to have been remedied with the replacement of the roof membrane in 1997. *rating: 3.*

Interior Items

These items were surveyed and rated on a room-by-room basis, and include composite ratings for all rooms in the entire building.

C1020 Interior Doors & Hardware: The interior doors are solid core wood in hollow metal frames. A lever handle, which appears to be TAS compliant, is only provided on the Toilet 114 door. The remainder of the door hardware consists of non-compliant bronze door knobs. No panic hardware is provided on any entrance/exit doors, but appears to be original to the building. *composite rating: 3.*

C3010 Wall Finishes: Predominate wall finish throughout is brick veneer, with paint on drywall or plaster partitions in selected areas. Toilet room 116 has ceramic wall tiles. The light colors offers good light reflectance and do not appear to be a cleaning or maintenance problem. *composite rating: 4.*

C3020 Floor Finishes: Floor covering throughout the building is predominantly carpet tile, with quarry tile used around the entrance, Foyer 117, Circulation Desk 104, and in the Toilet rooms 108 and 116. Vinyl tile is used in utility and staff areas. Generally, floor finishes are in good condition. *composite rating: 3.*

C3030 Ceiling Finishes: The dominant ceiling finish throughout the building is two-foot by two-foot lay-in suspended acoustical ceiling tile, with paint on plaster in the Janitor's and Mechanical Room 112. All ceiling finishes appear to be in good condition. *composite rating: 4.*

Vertical Movement & Egress

C2010 Stairs/Ramps: No fire stairs are required for this one-story building. *rating: N/A.*

D1010 Elevators: No elevator is required for this one-story building. *rating: N/A.*

Z1020 Handicapped Accessibility: The building provides three means of egress at grade level, of which all three are accessible routes. Toilet Room 114 has been modified from added to the original construction, carved out of space from the original Lobby, but does not meet all current TAS standards. *rating: 2.*

Equipment & Furnishings

E2010 Millwork & Casework: The cabinetry in each space appears to be original to the building, but is in working condition. The Circulation Desk appears to have been rebuilt and functions adequately. *composite rating: 4.*

E2020 Furnishings, Fixtures, & Equipment: In general, the furnishings in each space were installed when the building was renovated, and are in good condition. *composite rating: 4.*

Mechanical System Description

A Mechanical Room houses a multi-zone air handling unit (AHU) and a gas-fired hydronic boiler. The AHU has a total of six zones with dampers in the supply air ductwork with four thermostat locations of control. Zones 1, 3, and 6 combine to

provide one thermostat control for Circulation 104 and Reading areas 101 through 103. Zone 2 thermostat provides control for Staff Break Room 105. Zone 4 thermostat provides control for the Librarian Office 109. Zone 5 thermostat provides control for Staff Work Room 110. There is a motorized bypass damper located between the supply and return air ducts so system is classified as a variable volume and temperature (VVT).

The refrigeration cooling system consists of a direct expansion (DX) coil in the air handling unit and a matched air cooled condensing units located on the roof.

The heating system consists of a hydronic gas-fired boiler and an end-suction circulation pump. The AHU has a hydronic heating coil with a 3-way valve. Associated with the hydronic system is an expansion tank with make-up water connection and chemical pot feeder.

Plumbing System

D2020 Domestic Water Distribution: Copper piping is utilized throughout the building. Water pressure appears adequate with a 2" service to the building. *rating: 4.*

D2020 Domestic Water Heater: A 38-gallon gas-fired hot water heater rated 40,000 Btu/hr input is located in the Mechanical Room. The system is provided with an in-line circulation pump. It was installed in 2003. Water heater system does not include a thermostatic mixing valve to limit hot water temperatures to public lavatories. *rating: 3*

D2030 Sanitary Collection: Piping is a combination of PVC and cast iron. *rating: 4.*

D2040 Storm Water Collection: Internal drains provide roof drainage, according to the original construction drawings. Piping for roof drainage appears to be of adequate sizes, but there is no means for overflow at the perimeter. *rating: 3.*

Air Conditioning System

D3030 Compressor/Condenser: There are two air cooled condensers located on the roof. There is no roof access for this facility. The only access is to use an extension ladder. There was no extension ladder readily available at the site, so the condition of the units was not assessed. *rating: N/A.*

D3040 Air Handling Equipment: The air handling unit (AHU) is a multi-zone draw-thru Carrier unit was installed in 1995. It has a DX coiling coil and a hydronic heating coil. It appears to be in good condition. There are six zone dampers in the supply air discharge duct. Staff Work Room 110 was very cold and thermostat set point was at 58°F. The entire facility, excluding the Work Room 110, was humid, warm and airflow seemed insufficient. Staff has indicated there are temperature fluctuations throughout the facility. There is no means for humidity control with the existing system. *rating: 2.*

D3040 HVAC Distribution Systems: All heating, ventilating, and air conditioning (HVAC) systems are ducted supply and ducted return air. *rating: 4.*

D3040 Refrigerant Piping: Piping is copper tube with flexible elastomeric insulation. *rating: 4.*

Heating System

D3020 Boiler: The Laars hydronic heating boiler (750,000 Btu/hr input) is an atmospheric-type boiler. It was installed in 2001 and appears to be in good condition. *rating: 4.*

D3040 Pumps: The end-suction heating circulation pump appears to be original to the building (1967) and past its life expectancy. *rating: 0.*

D3040 Distribution Piping: Piping is primarily black steel and copper tube. *rating: 4.*

Automatic Temperature Controls

D3060 Automated HVAC Controls: It appears a 3-way control valve was recently installed at the AHU and associated controls have been installed for the facility. *rating: 4.*

Interior Mechanical Items

These items were surveyed and rated on a room-by-room basis, and include composite ratings for all rooms in the entire building.

D2010 Plumbing Fixtures: Men's Toilet 114 has one wall-mounted lavatory, one urinal, and one wall-mounted flush valve water closet. All fixtures are vitreous china. This restroom is currently not available for use and is utilized as storage. Women's Toilet 115 has one counter-mounted lavatory and two wall-mounted flush valve water closets. All fixtures are vitreous china. The lavatory basin is severely scratched. The unisex Toilet 116 has one wall-mounted lavatory and one floor-mounted flush valve water closet. The flush valve for the water closet is not installed correctly. The Staff Toilet 108 has one wall-mounted lavatory and one wall-mounted flush valve water closet. All fixtures are vitreous china.

One bi-level electric water cooler is provided in Foyer 117 and is in good condition. Staff Break Room 105 has one deep single compartment stainless steel sink, in good condition. There is one wall-mounted slop sink in Mechanical Room 112 but it is not in good condition. *composite rating: 1.*

D3040 Ventilation: Throughout most of the facility, air movement was poor. The facility was muggy and warm. There were ceiling fans mounted throughout the facility. *composite rating: 1*

D3040 Diffusers: Diffusers are predominantly ceiling mounted, square in most public spaces. The main return air grilles are not completely installed in the ceiling grid and are dirty. Many of the

ceiling diffusers have dirt near them on adjacent ceiling tiles, which typically indicates room air is dirty. *composite rating: 4.*

D3060 Local Automatic Temperature Control: Thermostats provide control for the building but no means for individual temperature control beyond varying airflow. *rating: 2.*

Fire Protection System

D4010 Fire Protection Sprinklers: No fire protection system exists in the facility. *rating: 0.*

Electrical System Description

The electrical distribution system consists of one 400A, 120/208V, 3-phase, 4-wire distribution panel and one 225A, 120/208V, 1-phase, 3-wire branch circuit panel "B" located in the Mechanical Room. There is an additional 225A, 120/208V, 1-phase, 3-wire branch circuit panel "A" located in the Office Area. The distribution panel feed HVAC equipment and panels "A" and "B". The utility meter and current transformer (CT) box are located inside the Mechanical Room. Lighting is automatically controlled. The facility has no emergency power system.

D5010 Service Equipment: All equipment is original. Main panel has one space available for additional loads. All panels are in good condition. There is no evidence that feeders need to be replaced. The CT cabinet was unlocked, allowing live conductors to be accessible. The CT cabinet needs to be locked at all times. *rating: 4.*

D5010 Power Distribution Panels: Panel "A" has 20 circuits and no available spaces and panel "B" has one space available for additional branch circuits. Panel "A" may need to be upgraded to 30 or 42 circuits to provide additional capacity. *rating: 3.*

D5020 Lighting & Branch Wiring: There is no evidence that branch circuits, and other conductors need to be replaced. *rating: 4.*

D5040 Emergency Power: The building does not have an emergency power distribution system. *rating: 0.*

Interior Electrical Items

These items were surveyed and rated on a room-by-room basis, and include composite ratings for all rooms in the entire building.

D5020 Receptacles: Power distribution in the Reading Area is achieved through the use of power poles. Additional receptacles, either floor- or wall-mounted are needed for laptop use. Library personnel requests additional receptacles in the Break Room. *composite rating: 2.*

D5020 Lighting Fixtures: Two-foot by four-foot fluorescent fixtures are the primary source of illumination. Lighting levels are approximately 60 foot-candles (FC) at Reading Areas and 30 FC at books. Switching in public areas is automatic through occupancy sensors. Interior lighting is in good condition. *composite rating: 4.*

D5030 Data Infrastructure: Data infrastructure is managed from a wall-mounted cabinet in Staff Break Room 105. This cabinet, typical for most branches, provides adequate data infrastructure in a limited space. Although adequate for the facility, it is recommended that any future renovations include at least one dedicated space for IT infrastructure. *composite rating: 4.*

D5030 Public Address System: The facility does not have a public address system. *composite rating: 0.*

D5030 Security System: This building has a security system. *composite rating: 4.*

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D5040 Fire Alarm: This building does not have a fire alarm system. *composite rating: 0.*

D5040 Emergency/Egress Lighting: This facility does not have an emergency/egress lighting system. *composite rating: 0.*

Additional Systems

The following are systems which are either good practice in library facility design or would be required by current building codes if a renovation or expansion were to be undertaken. They do not presently exist in the building, so it is suggested they be added.

Handicapped Accessibility: Provisions are adequate to access the building, and essential facilities within, but some additional requirements are applicable. Door hardware, toilet room configuration and some furniture placement within the facility create limited accessibility to many areas.

Exiting: Provisions are not adequate, as the only two direct exits to the outside from the public areas of the facility are too close together, per code.

Install Fire Protection: No fire protection system is provided, but should be installed throughout the building.

Install Smoke Detection: This code requirement may not have been applicable to this facility when built, but current codes require additional system components.

Install Fire Alarm: No fire alarm system is provided, but alarms should be installed per current code.

Install Public Address Systems: A sound system for public address should be installed throughout the building if it is expanded.

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Construction Cost Impacts

The building-wide survey includes the identification of issues which may impact the cost of expansion. Examples of these issues include the degree of difficulty of construction on the site, the current state of the local economy, how renovation will impact the operations of a facility, etcetera.

Location: Though in a residential neighborhood, the site is near a main thoroughfare, and is in a good location for the delivery of construction materials and labor.

Site Limitations: Limited land is available for future horizontal expansion, or for staging of construction.

Construction Difficulty: No other apparent limitations exist to additional construction at the site. Given no evidence of settlement, sub-surface conditions may be stable. However, a geotechnical analysis of the soil should be conducted prior to any expansion of the facility.

Phasing: Future horizontal additions can be constructed, but not without impact to the existing operations. An on-site addition could be completed without requiring the Library to relocate to another building, but would not be advisable.

Historic Issues: The building is not located within a historic district.

Asbestos: No asbestos is known to exist in the building or on the site at this time.

Costs to Retrofit Existing Building Systems

Table A5.10.6 provides the unit costs of the various retrofit projects. The unit prices apply to either the overall gross area of the building (bgsf), or net assignable square footage (nasf), as appropriate, to develop the cost for system retrofits.

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Analysis. The total cost to retrofit the building systems is \$254,768, or \$40.36 per square foot. Most of the systems

affected would be made more energy efficient, and/or fully code compliant – improving the life safety of the facility.

Table A5.10.6
Retrofit of Existing Building Systems, Riverside Library

<i>uniformat code</i>	<i>construction element</i>	<i>rating</i>	<i>weight factor</i>	<i>square footage</i>	<i>unit</i>	<i>unit cost</i>	<i>total cost</i>	<i>comments</i>
A1010	Foundations	4	0%	6,313	bgsf	\$5.22	\$0	
A1030	Slabs on grade	4	0%	6,313	bgsf	2.65	0	
B1020	Superstructure	4	0%	6,313	bgsf	12.45	0	
B2010	Exterior walls	4	0%	6,313	bgsf	9.55	0	
B2020	Exterior windows	1	75%	6,313	bgsf	8.11	38,399	replace single-pane glass
B2030	Exterior doors	1	75%	6,313	bgsf	4.85	22,964	replace glass with tempered/insulated
B3010	Roofing	3	25%	6,313	bgsf	6.89	10,874	restore skylights, roof replaced in 1997
C1020	Interior doors & hardware	3	35%	5,929	nasf	3.15	6,537	replace door knobs with levers
C2010	Stairs/ramps/ladders	2	50%	6,313	bgsf	7.55	23,832	ramp is too steep for TAS compliance
C3010	Wall finishes	4	0%	5,306	nasf	3.33	0	
C3020	Floor finishes	3	25%	5,306	nasf	3.15	4,178	rotate carpet tiles to even wear
C3030	Ceiling finishes	4	0%	5,306	nasf	3.28	0	
D2010	Plumbing fixtures	2	50%	5,306	nasf	2.50	6,633	replace select/damaged fixtures
D2020	Domestic water distribution	4	0%	6,313	bgsf	1.72	0	
D2020	Domestic water heaters	3	25%	6,313	bgsf	0.25	395	add thermostatic mixing valve
D2030	Sanitary collection	4	0%	6,313	bgsf	1.15	0	
D2040	Storm water collection	3	25%	6,313	bgsf	1.77	2,794	increase overflow capability
D3020	Boilers	4	0%	6,313	bgsf	4.78	0	
D3030	Compressors/condensers	N/A	0%	6,313	bgsf	2.05	0	equipment not assessed
D3040	Air handling equipment	2	50%	6,313	bgsf	7.10	22,411	add capacity & humidity control
D3040	Refrigerant piping	4	0%	6,313	bgsf	1.05	0	
D3040	Heating system pumps	0	110%	6,313	bgsf	0.87	6,042	replace existing equipment
D3040	Distribution piping	4	0%	6,313	bgsf	1.05	0	
D3040	HVAC ductwork	4	0%	5,306	nasf	4.25	0	
D3040	Ventilation	1	75%	5,306	nasf	2.03	8,078	verify restroom exhaust capacities
D3050	HVAC diffusers	4	0%	5,306	nasf	1.21	0	
D3060	Building temperature controls	4	0%	5,306	nasf	3.15	0	
D3060	Local temperature controls	2	50%	5,306	nasf	0.48	1,273	repair or replace thermostats

Table A5.10.6 (continued)
 Retrofit of Existing Building Systems, Riverside Library

<i>uniformat code</i>	<i>construction element</i>	<i>rating</i>	<i>weight factor</i>	<i>square footage</i>	<i>unit cost</i>	<i>total cost</i>	<i>comments</i>
D4010	Fire protection system	0	110%	6,313	bgsf 3.90	27,083	install new dry pipe system
D5010	Electrical service equipment	4	0%	6,313	bgsf \$1.97	\$0	
D5010	Distribution panels	3	25%	6,313	bgsf 3.43	5,413	upgrade Panel A to add capacity
D5010	Branch power distribution	4	0%	6,313	bgsf 2.30	0	
D5020	Lighting fixtures	4	0%	5,306	nasf 3.50	0	
D5020	Emergency lighting	0	110%	5,306	nasf 0.90	5,253	install new system
D5020	Convenience receptacles	2	50%	5,306	nasf 2.90	7,694	add new outlets
D5030	Data infrastructure	4	0%	6,313	bgsf 3.77	0	
D5030	Public address system	0	110%	5,306	nasf 1.55	9,047	install new system
D5030	Building security system	4	0%	6,313	bgsf 1.10	0	
D5040	Fire alarm system	0	110%	6,313	bgsf 1.75	12,153	install new system
D5040	Emergency power	0	110%	6,313	bgsf 1.66	11,528	install new system
E2010	Casework & millwork	4	0%	5,306	nasf 8.22	0	
E2020	Furniture & equipment	4	0%	5,306	nasf 22.50	0	
G2010	Roadways	2	50%	6,313	bgsf 1.12	3,535	asphalt needs repair
G2020	Parking Lots	2	50%	6,313	bgsf 0.97	3,062	asphalt needs repair
G2030	Pedestrian Paving	3	25%	6,313	bgsf 0.76	1,199	repair cracked sidewalks
G2040	Site Development	1	75%	6,313	bgsf 1.42	6,723	site lighting needs improvement
G2050	Landscaping	4	0%	6,313	bgsf 0.23	0	
G3000	Site Utilities	4	0%	6,313	bgsf 1.44	0	
Z1010	Handicapped access	2	50%	6,313	bgsf 2.43	7,670	address abandoned restroom, doors
TOTAL RETROFIT COST						\$254,768	