

## SUMMERGLEN LIBRARY

The Summerglen Library of the Fort Worth Library located in north Fort Worth. The building occupies a prime location in a retail district near the intersection of Basswood Boulevard and North Beach Street, north of Loop 820 and east of Interstate 35W, 10.75 miles from the Central Library.

**Official Name:** Summerglen Library

**Building Address:** 4205 Basswood Boulevard

**Library Facility Code:** SGN

### Site Description

The building is situated on a landscaped lot of 1.84 facing Basswood Boulevard. The topography of the site slopes is virtually flat. 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 SGN-1 illustrates the site of the Summerglen Library (11" x 17" overleaf).

### Architectural Description

The building is a one-story structure with a flat roof. Construction of the building was completed in 2000. The facility appears to be well built and in very good condition. Drawing SGN-2 depicts the Ground Floor of the Summerglen Library and the square footage of each room (11" x 17" overleaf).

**Square Footage:** There are currently 11,069 building gross square feet (bgsf). There are 9,870 net assignable square feet (nasf) within the facility. The library currently occupies the entire building. Table A5.14.1 contains a room-by-room square footage tabulation for the facility.

## Existing Facility Assessment

**Table A5.14.1**

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

### Ground Floor

room no.	room name	square footage net assignable	building gross
101	Entrance	103.20	
102	Lobby	328.11	
103	Lobby	311.49	
104	Circulation Desk	401.61	
105	Storytime	353.19	
106	Storage	17.09	
107	Children's Collection	1,126.82	
108	Reference	2,026.92	
109	Adult Collection	1,909.64	
110	Office	136.58	
111	Conference	136.58	
112	Hallway	219.15	
113	Janitor		18.89
114	Staff Work Room	565.86	
115	Staff Toilet		56.00
116	Women's Toilet		194.53
117	Men's Toilet		163.78
118	Kitchen	131.96	
119	Staff Break Room	255.56	
120	Book Drop	56.00	
121	Electrical/Telephone		67.25
122	ISS Room		68.91
123	Storage	48.33	
124	Meeting Room	741.15	
125	Media Collection	1,001.03	
assigned rooms and spaces		9,870.3	
unassigned walls, pipe chases, etc.			1,198.27
TOTAL			11,068.57
EFFICIENCY			89.17%

## SUMMERGLEN COMMUNITY LIBRARY

**Table A5.14.1 (continued)**

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

### Summary

	<i>floor</i>	<i>net assignable square footage</i>	<i>building gross square footage</i>	<i>efficiency</i>
100	Ground Floor	9,870.30	11,068.57	89.17%
<b>TOTAL</b>		<b>9,870.30</b>	<b>11,068.57</b>	<b>89.17%</b>

The T/PW facilities database attributes 11,055 bgsf to the Summerglen Library, which is a close approximation and includes all of the enclosed space but excludes the southeast-facing covered exterior entrance.

### Trade Area Population

The population within the 8-minute drive time trade area for the Summerglen Library is 70,285, as determined by the Customer Analytics Consultants.

### Driving Distance/Time to Other Libraries

Diamond Hill/Jarvis	8.01 miles	15 minutes
Central Library	10.75 miles	17 minutes

### Demographics

Households with children	11,026
Persons age 17 and under	21,814
Persons age 18 to 64	45,303
Persons age 65+	3,168
Percent Hispanic	21.5%
Percent Asian	6.3%

## Existing Facility Assessment

### Output Measures

The Library Consultants calculated a number of measurements of operating efficiency and their respective rankings among the 15 current FWL libraries, summarized in Table A5.14.2.

**Table A5.14.2**

Output Measures, Summerglen Library

<i>output</i>	<i>measure</i>	<i>ranking</i>
Contacts per capita	9.26	10 of 15
Cost efficiency per contact	\$1.46	5 of 15
Cost efficiency per SF to operate	\$97.63	12 of 15

### Collections

The current total collection size is 76,049. At 1.08 items per capita, the collection does not compare favorably to 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 31.0 percent of the total, and the combined Children's/Teen collections are 55.8 percent of total. The library materials and services more likely to be used at Summerglen are Children's Fiction, Picture Books & Readers, Books on CD, and Children's Non-Fiction.

The space required to house the collections in an ADA/User-Friendly standard is 9,282 square feet, or 84.4% of the total building size.

### Computers & Seating

Based on the number of computers provided for the public, the Summerglen Library, with 41, is above Basic" when compared to Texas State Library standards.

## SUMMERGLEN COMMUNITY LIBRARY

The current public seating ratio, including computers, at Summerglen is one seat per 1,059 (1:1,059) collection items. This compares quite favorably to the neighborhood library standard of 1:1,500 to 1:1,800 collection items.

### Site & Building Capacity

The Summerglen Library currently provides 51 parking spaces on site. At 11,000 gross square feet, 55 parking spaces would be needed in order to meet the minimum standard of one space per 200 bgsf of building.

Staff workspace is 9.71% 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 523 nasf less than the minimum need of 1,481 nasf.

**Table A5.14.3**

Site & Building Capacity, Summerglen 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	9,870	15,260	64.7%
Building gross square feet	11,068	17,953	61.7%
Site area, in acres	1.84	1.65	111.5%
Parking spaces	52	90	57.8%

### Growth Potential

**Adaptability:** The building is composed of open spaces, with structural spans ranging from 35 to 40 feet east-to-west and from 25 to 28 feet north-to-south. Changes to the configuration of the spaces appear to be feasible.

## Existing Facility Assessment

**Expandability:** Additions to the north and the west appear most feasible, using the vacant land and/or the existing staff parking lot for future horizontal expansion. It is not conceivable that vertical expansion could be economically achieved, given a preliminary analysis of the roof structure.

### Technology Assessment

Historic computer usage at the Summerglen Library is presented for fiscal years 2007 through 2009 in Table A5.14.4 for PC logins, PC logins to library visits, and wi-fi connections.

**Table A5.14.4**

Historic Computer Usage, Summerglen Library

<i>service item</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>
PC Logins	45,017	40,045	35,872
PC Logins to Visits Ratio	21.9%	18.4%	15.6%
Wi-Fi Connections	n/a	296	1,067

**Computer Network:** Power and network connectivity are accessible via floor boxes in both the public and staff areas. Not all are currently required for existing devices. Limited power outlets are available in the public area for wi-fi users. A separate server/telecommunications closet is located off of the staff area. Wi-fi was made available at Summerglen in May of 2008.

**Public Computers:** A summary of the distribution of public computers is provided in Table A5.14.5 below. Computer reservation stations and print release stations are not included in the Adult Services quantity.

**Table A5.14.5**

Public Computer Distribution, Summerglenn Library

<i>computer location</i>	<i>quantity</i>
Public Access Catalog (PAC)	5
Adult Services	30
Teen Services	0
Children's Services	6
<b>TOTAL</b>	<b>41</b>

The five PACs provided are sufficient. Of the 30 Internet computers provided for adults, four are express, 15-minute stations. Some monitors face away from the service desk, making it difficult for staff to monitor their use. One reservation station and one print release station are provided, which are sufficient. The library's public computers were used 30.2% fewer hours per computer than the system-wide average of public computer use. This library ranks lowest in the system in public computer use on this factor.

**Public Technology:** A TV is installed in the public area above the door to the manager's office, where customers waiting in line for the circulation desk can view it. It is kept on and turned to the news. A second TV is on a cart and used for Teen Services gaming a couple of times each week. Customers have requested a scanner.

**Computer Training:** Training is not offered.

**Self-Service:** One self-check station is provided and is located outside the supervisor's office, a short distance from the circulation desk.

**Study Rooms & Meeting Spaces:** No study rooms exist. Meeting Room 124 is equipped with power and network jacks. A recessed screen is installed.

**Technology for Staff:** A total of 15 staff computers are provided. Four computers are provided at the circulation desk. At especially busy times, the computer in the supervisor's office has also been used to check out items. There is no wheelchair accessible check-out station. Faster printers at the circulation desk would improve staff efficiency and customer service. There is no PC to check returned materials in upon return at the book drop. Three computers are provided at the information desk. Primary uses of these computers include processing holds and library card applications.

A drive-up book return exists but customers must get out of their car to use it. Materials are returned into a separate room (Book Drop 120) off of Staff Work Room 114. The size of the room may accommodate a small two or three bin sorter, but other items in the room would need to be removed. The inside book return deposits materials into a space inside Staff Work Room 114. A computer is located there, and a staff member continually retrieves the returned materials and checks them in. Equipping this return with an automated return and small sorter could improve staff productivity. A laptop with docking station is provided for the supervisor. Two computers are provided in the second staff office. Four computers are provided in the Work Room.

**Site Improvements**

**G2010 Roadways:** A loop drive provides access to the drive-up materials return. *composite rating: 4.*

**G2020 Parking Lots:** A striped parking lot for 43 cars, including three spaces reserved for the handicapped, is situated to the south and east of the building. A staff parking lot with 9 stalls is located west of the building. Storm water drainage from paved parking areas is effective during moderate rains. *composite rating: 4.*

**G2030 Pedestrian Paving:** Handicapped access to the public entrance appears to be compliant, as does the exit from Meeting Room 124. The other two egress points from the building, on the west façade, are not compliant. *composite rating: 3.*

**G2040 Site Development:** Lighting on the site metal halide lamps and appears adequate. Three flag poles and one rack for six bikes is provided at the public entrance. A masonry yard sign is provided between the parking lot and Basswood Boulevard. *composite rating: 4.*

**G2050 Landscaping:** Small trees, shrubs, and flower beds are planted on the south, east, and north sides of the building – and are particularly dense around the entrance. *composite rating: 4.*

**G3000 Site Utilities** Underground utilities which appear to be available at the site include water, sanitary sewer, storm sewer, gas, power, and telephone. Overhead utilities which appear to be available at the site include cable television. *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 each column and approximately 14 feet on center around the perimeter. No evidence of settlement was observed. *rating: 4.*

**A1030 Slabs on Grade:** Interior concrete floors are six-inch thick slab-on-grade type, reinforced with #4 and #5 re-bars, per the 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 columns, supporting steel beams and open-web steel joists supporting the roof deck. Eight-inch thick concrete masonry unit (CMU) walls provide lateral bracing around the perimeter. Wood timber frame construction supports awning systems over select windows and exterior doors. *rating: 4.*

**B2010 Exterior Walls:** The building uses stone veneer and decorative CMU as bearing walls in most locations. Weep holes are properly spaced around the perimeter. R-19 batt insulation appears to have been provided within the exterior, as indicated on the construction drawings, but is difficult to verify from visual inspection. *rating: 4.*

**B2020 Exterior Windows:** Window units are typically fixed glass, with insulated glass in aluminum frames. *rating: 4.*

**B2030 Exterior Doors:** The entrance doors are aluminum with insulated vision glass, which does not appear to be tempered, in an aluminum storefront system. All other exterior doors in the building are hollow metal in hollow metal frames. *rating: 4.*

**B3010 Roofing:** The roof of the building is primarily flat, utilizing rolled asphalt roofing, with seams every three feet, not a two-ply modified bituminous/thermoplastic membrane roofing system as stated in the T/PW database. The substrate material under the roofing membrane is metal decking, as indicated on the construction drawings. Standing seam metal roofing is used as an awning system over windows and exterior doors including the public entrance, over tongue-in-groove wood decking. *rating: 4.*

### 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. Door hardware consists of bronze lever handles, which are ADA compliant. Panic hardware is provided on the staff entrance/exit doors. *composite rating: 4.*

**C3010 Wall Finishes:** Predominate wall finishes throughout are light colored paint on drywall partitions. Toilet Rooms have 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 terrazzo in high traffic areas of the Lobby and around the Circulation Desk. Vinyl composition tile is used in utility and staff areas and 12-inch by 12-inch porcelain tile is used in Toilet Rooms 116 and 117, according to the construction drawings. Generally, floor finishes are in very good condition. *composite rating: 4.*

**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 drywall above the Circulation Desk, Lobby, and in Toilet Rooms and Book Drop 120. Most ceiling finishes appear to be in very good condition, with the exception of several water-stained ceiling tiles in the area of Circulation 108. *composite rating: 3.*

### Vertical Movement & Egress

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

## Existing Facility Assessment

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

**Z1020 Handicapped Accessibility:** The building provides four means of egress at grade level, of which two appear to be accessible routes. Toilet Rooms meet current TAS standards. *rating: 3.*

### 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 are those originally installed when the building opened, and are in good condition. *composite rating: 4.*

### Mechanical System Description

There are six package rooftop units (RTU's) with direct expansion (DX) refrigeration and electric heating for this facility. Rooftop units are all constant-volume units.

### Plumbing System

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

**D2020 Domestic Water Heater:** There is one electric water heater for this facility which is located above the ceiling of the Staff Toilet 115. It is original to the building (2000) and is very difficult to access. The 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:** Scuppers, metal gutters and downspouts provide roof drainage, along with perimeter roof drains and leaders around the building perimeter. Piping for roof drainage appears to be adequate, but the quantity of roof drains does not. *rating: 3.*

### Air Conditioning System

**D3050 Packaged Units:** There are six packaged rooftops units which serve various rooms throughout the facility and are original to the building (2000). These are DX units with R-22 refrigerant and electric heat strips. All units are Carrier brand with a total nominal tonnage for the building of 45 tons, with an Energy Efficiency Ratio (EER) of 9 per unit. The majority of the RTU's have missing or loose screws holding on the condenser coil guard and as such generating noise and vibration. One of the RTU's supply fans is not operating smoothly and needs to be adjusted. This is contributing to excessive noise in the Circulation Desk area. There are several water-stained ceiling tiles below the area of the rooftop units in the Circulation area, indicating there has been or is on-going leaks.

The staff indicated the Meeting Room is musty and muggy. The amount of outside air provided by the dedicated RTU for the Room might contribute to this issue. Currently, about 27% outside air to supply air is provided to the Meeting Room. This is high for a standard packaged DX RTU to properly handle. Additionally, for a majority of the time, this room is unoccupied and the RTU system is then oversized and cannot satisfy humidity issues since it tends to cycle on and off to maintain temperature. Possible solutions are to provide a multiple-compressor unit for the space to allow additional refrigeration staging. Provide a unit with reheat capability via hot gas reheat. *rating: 2.*

**D3040 HVAC Distribution Systems:** All heating, ventilating, and air conditioning (HVAC) systems are ducted supply and partial ducted return air which utilize an above ceiling return air plenum. There is excessive rumbling and noise within the Circulation area directly below the RTU's. Contributing to part of this issue is the short duct length and limited use of elbows on the return air duct from the units. Additionally, there are not any return air boots located at the ceiling mounted return air grilles. One of the air devices in Meeting Room 124 is generating a rattling noise. This might be to a loose balancing damper. *rating: 2.*

### Automatic Temperature Controls

**D3060 Automated HVAC Controls:** There is no centralized HVAC control system for the facility. *rating: 0.*

### 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 117 has two counter-mounted lavatories, one urinal, and one floor-mounted flush valve handicap accessible water closet. Urinal flush valve is sensor operated. All fixtures are vitreous china. All fixtures are in good condition. The public Women's Toilet 116 has two counter-mounted handicapped accessible lavatories and three floor-mounted flush valve water closets with one of the water closets handicap accessible. Flush valves are sensor operated. All fixtures are vitreous china and all fixtures are in good condition.

The Staff Toilet 115 has one wall-mounted lavatory and one floor-mounted flush valve water closet. Fixtures are handicap accessible and are vitreous china. There has been an issue with the flush valve assembly not operating correctly and has been repaired several times.

Kitchen 118 has one stainless steel double compartment sink that is handicapped accessible. There is one floor mounted mop sink in Janitor Room 113 and in good condition. There is one bi-level electric water cooler in Lobby 102. This fixture is in good condition. *composite rating: 4.*

**D3040 Ventilation:** Throughout most of the facility, air movement was good. *composite rating: 4*

**D3040 Diffusers:** Diffusers are predominantly ceiling mounted. Air devices are original to the building and appear to be in good condition. *composite rating: 4.*

**D3060 Local Automatic Temperature Control:** Thermostat control for the building is individual programmable thermostats. There does not appear to be any humidity controls or capability to limit high humidity levels. Staff also indicated the front of the building is hot in the summer time and the rest of the building cold, and vice-versa in the winter time. This issue might be attributed to thermostat location; in that, the thermostat of the Lobby area is too close to the RTU serving the Circulation Desk 104 area and is not getting an accurate reading for the Lobby area. Also, Lobby 102 and Lobby 103 have south exposures, and this same unit serves the interior of the Circulation Desk area. *composite rating: 4.*

### Fire Protection System

**D4010 Fire Protection Sprinklers:** Book Drop 120 is provided with a dedicated, self contained fire protection system. No fire protection system exists in the remaining part of the facility. *rating: 0.*

### Electrical System Description

The electrical distribution system consists of one 1200A, 120/208V, 3-phase, 4-wire main switchboard “MDP” and four 120/208V, 3-phase, 4-wire branch circuit panels. Switchboard “MDP” feeds transformer branch panels “L” (225A), “AC” (600A), “P” (225A) and “IG” (225A). Panel “L” feeds lighting loads, panel “AC” feeds mostly HVAC loads, panel “P” feeds receptacle loads, and panel “IG” feeds computer loads through isolated ground. Lighting is automatically controlled. There is no emergency power system.

**D5010 Service Equipment:** All equipment is original and in good condition. There is limited spare capacity to handle routine maintenance. There is no evidence that feeders need to be replaced. *rating: 4.*

**D5010 Power Distribution Panels:** Branch panels are in good condition. There is limited spare capacity to handle routine maintenance. *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:** There is no 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:** Computers and other loads in the reading and computer areas are fed through a combination of floor- and wall-mounted receptacles. Receptacle locations are limited and restrict relocation of equipment. More receptacles are needed. *composite rating: 2.*

## SUMMERGLEN COMMUNITY LIBRARY

**D5020 Lighting:** Direct/indirect fluorescent fixtures are the primary source of illumination in the Reading Area. Lighting levels are 30 foot-candles (FC) in Meeting Room, 45 FC in Reading Area, and 15 FC on book stacks. Switching is achieved through a combination of occupancy sensors and time clocks. Interior lighting is in good condition. *composite rating: 4.*

**D5030 Data Infrastructure:** Data infrastructure is managed from a dedicated ISS Room 122 adjacent to Staff Break Room 119. Rack and room have enough capacity for growth. Library personnel report that they need more data ports out in the Reading Area. *rating: 3.*

**D5030 Public Address System:** The facility has a public address system. There is no evidence of deficiencies. *composite rating 4.*

**D5030 Security System:** This building has a security system. There is no evidence of deficiencies. *composite rating: 4.*

**D5040 Fire Alarm:** This building has a fire alarm system. There was no evidence of deficiencies upon our evaluation, although library staff report having problems with the system in the past. The consultants recommend a review of inspection and testing procedures. *composite rating: 4.*

**D5040 Emergency/Egress Lighting:** There is no emergency 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.

## Existing Facility Assessment

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

**Exiting:** Provisions are not adequate, so additional requirements are applicable to this facility in terms of the accessibility of the staff entrance and public exit on the west side of the building.

**Install Building Energy Management System:** The consultants recommend installation of a building automation system for energy management.

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

**Install Smoke Detection:** This code requirement was applicable to this facility when built, but current codes may require additional system components, depending on the extent of renovation.

### 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:** 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.

## SUMMERGLEN COMMUNITY LIBRARY

## Existing Facility Assessment

**Construction Difficulty:** No 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. It is conceivable that an on-site addition could be completed without requiring the Library to relocate to another building, but such a phasing plan would not be advisable.

**Historic Issues:** The building is not located within a historic district, however, if expansion or new construction is to occur, any new addition should be sensitive to the character of the neighborhood.

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

### Costs to Retrofit Existing Building Systems

Table A5.14.6 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.

**Analysis.** The total cost to retrofit the building systems is \$181,741, or \$16.42 per square foot.

**Table A5.14.6**  
Retrofit of Existing Building Systems, the Summerglenn 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>
A1010	Foundations	4	0%	11,069 bgsf	\$5.22	\$0	
A1030	Slabs on grade	4	0%	11,069 bgsf	2.65	0	
B1020	Superstructure	4	0%	11,069 bgsf	12.45	0	
B2010	Exterior walls	4	0%	11,069 bgsf	9.55	0	
B2020	Exterior windows	4	0%	11,069 bgsf	8.11	0	
B2030	Exterior doors	4	0%	11,069 bgsf	4.85	0	
B3010	Roofing 2000	4	0%	11,069 bgsf	6.89	0	
C1020	Interior doors & hardware	4	0%	9,870 nasf	3.15	0	
C2010	Stairs/ramps	4	0%	11,069 bgsf	7.55	0	
C3010	Wall finishes	4	0%	9,870 nasf	3.33	0	
C3020	Floor finishes	4	0%	9,870 nasf	3.15	0	
C3030	Ceiling finishes	4	0%	9,870 nasf	3.28	0	
D2010	Plumbing fixtures	4	0%	9,870 nasf	2.50	0	
D2020	Domestic water distribution	4	0%	11,069 bgsf	1.72	0	
D2020	Domestic water heaters	3	25%	11,069 bgsf	0.25	692	add thermostatic mixing valve

**Table A5.14.6 (continued)**  
Retrofit of Existing Building Systems, Summerglenn 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>	
D2030	Sanitary collection	4	0%	11,069	bgsf	\$1.15	\$0	
D2040	Storm water collection	3	25%	11,069	bgsf	1.77	4,898	add roof drains at perimeter
D3040	HVAC ductwork	3	25%	9,870	nasf	4.25	10,487	add return boots/elbows, fix damper
D3040	Ventilation	4	0%	9,870	nasf	2.03	0	
D3050	Air conditioning units	3	25%	9,870	nasf	6.55	16,162	address noise, vibration & leaks
D3050	HVAC diffusers	4	0%	9,870	nasf	1.21	0	
D3060	Building temperature controls	0	110%	9,870	nasf	3.15	34,200	install new DDC system
D3060	Local temperature controls	4	0%	9,870	nasf	0.48	0	
D4010	Fire protection system	0	110%	11,069	bgsf	3.90	47,486	install new dry-pipe system
D5010	Electrical service equipment	4	0%	11,069	bgsf	1.97	0	
D5010	Distribution panels	4	0%	11,069	bgsf	3.43	0	
D5010	Branch power distribution	3	25%	11,069	bgsf	2.30	6,365	add capacity for futre expansion
D5020	Lighting fixtures	4	0%	9,870	nasf	3.50	0	
D5020	Emergency lighting	0	110%	9,870	nasf	0.90	9,771	install new system
D5020	Convenience receptacles	2	50%	9,870	nasf	2.90	14,312	install additional receptacles
D5030	Data infrastructure	3	25%	11,069	bgsf	3.77	10,433	add data outlets in public areas
D5030	Public address system	4	0%	9,870	nasf	1.55	0	
D5030	Building security system	4	0%	11,069	bgsf	1.10	0	
D5040	Fire alarm system	4	0%	11,069	bgsf	1.75	0	
D5040	Emergency generator	0	110%	11,069	bgsf	1.66	20,212	install new system
E2010	Casework & millwork	4	0%	9,870	nasf	8.22	0	
E2020	Furniture & equipment	4	0%	9,870	nasf	22.50	0	
G2010	Roadways	4	0%	11,069	bgsf	1.12	0	
G2020	Parking Lots	4	0%	11,069	bgsf	0.97	0	
G2030	Pedestrian Paving	4	0%	11,069	bgsf	0.76	0	
G2040	Site Development	4	0%	11,069	bgsf	0.42	0	
G2050	Landscaping	4	0%	11,069	bgsf	0.23	0	
G3000	Site Utilities	4	0%	11,069	bgsf	1.44	0	
Z1010	Handicapped access	3	25%	11,069	bgsf	2.43	6,724	address egress accessibility
<b>TOTAL RETROFIT COST</b>						<b>\$181,741</b>		