

# City of Snohomish

## *Facility Condition Assessment Volume 1: Executive Summary Report*



Prepared by MENG Analysis, December 2023

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# Executive Summary

## Introduction

In 2023, the City of Snohomish, Washington engaged MENG Analysis to complete a comprehensive facility condition assessment (FCA). The purpose of this assessment is to assist City staff in organizing & prioritizing maintenance backlog needs while supporting future-focused proactive facility management.

21 buildings and 15 site infrastructures were examined during this condition assessment. Additionally, the playground equipment was reviewed at Fischer Park, Claytown Park, and Morgantown Park. The total square footage of the surveyed buildings is just under 69,400 SF.

FCA Stats	
<b>Number of Surveyed Buildings</b>	<b>Total SF Surveyed</b>
21	69.4K
<b>Total Replacement Value of Facilities</b> <small>(2023 dollars)</small>	<b>Long-term Needs 2029-2042</b>
\$25.4M	\$12M
<b>2023-2028 Deficiencies</b>	<b>Priority<sup>1</sup> Needs 6 Years</b>
\$37.6M	\$1.6M

## Report Organization

This Executive Summary Report (Volume 1) presents an introduction and overview to the Facility Condition assessment process as well as summary findings across all facilities. The Facility Details Report (Volume 2) contains database-generated subsystem level reports and detailed cost information.

## Terminology and Abbreviations

To aid in understanding the data and concepts presented in this report, the following list includes definitions of common terms and abbreviations related to the FCA process.

**Facility Condition Assessment (FCA):** A structured process to document the conditions of site infrastructure and building systems. FCAs are typically performed by a multi-disciplinary team of architects, engineers, construction, and cost specialists. Facility information and condition data should be maintained in a database for ease of updating and reporting. The data should be renewed over time.

<sup>1</sup> Priority needs include life-safety and code issue deficiencies.



**Facility Condition Index (FCI):** A benchmark used to compare relative condition of facilities within a portfolio of assets; derived by the following formula:

*Note: There are a number of different methods used by various organizations to calculate that backlog. For this reason, using FCIs to compare City of Snohomish facilities to other organizations may not represent accurate equivalency.*

$$\text{FCI} = \frac{\text{Backlog of Maintenance \& Repair (BMAR)}}{\text{Current Replacement Value (CRV)}}$$

This assessment uses a parametric method that calculates BMAR based on the assessed condition scores. The parametric backlog for each system is calculated based on a statistical theoretical percentage of that system that would need repair or replacement for each of the qualitative condition scores. The costs of those systems are the facility use cost models customized for Snohomish facilities.

**Predicted Renewal Model:** A theoretical forecast of when building systems will exceed their typical lifespan and funding will be required for renewals.

**Remaining Useful Life:** An estimate of the years that a facility system may remain serviceable or in operation before failure; which would then require system renewal or replacement.

**Subsystem:** The term subsystem in this report refers to a Uniformat Level 3 building systems category (e.g., B3010 - Roof Coverings; or B3020 – Roof Opening; or B3030 – Projections).

**System:** The term system in this report refers to a Uniformat Level 2 building system category (e.g., B30 – Roofing)

**Commonly Used Abbreviations**

AC = Asphalt concrete  
 ACT = Acoustic ceiling tile  
 A/V = Audio/video  
 AHU = Air handling unit  
 ASHRAE = American Society of Heating, Refrigeration, & Air Conditioning Engineers  
 BUR = Built-up roofing  
 CCTV = Closed circuit television  
 CFH = Cubic feet per hour (of natural gas)  
 CFL = Compact fluorescent  
 CI = Cast iron  
 CMU = Concrete masonry unit  
 CO2 = Carbon dioxide  
 CU = Condensing unit  
 Cx = Commissioning  
 DDC = Direct digital control  
 DHW = Domestic hot water  
 Dx = Direct expansion

EA = Each (measurable unit)  
 EF = Exhaust fan  
 EFIS = Exterior insulation finishing system  
 FRP = Fiber reinforced plastic  
 GI = Grease interceptor  
 GSHP = Ground-source heat pump  
 HID = High intensity discharge (lamps)  
 HM = Hollow metal  
 HVAC = Heating, ventilating, and air conditioning  
 IT = Information technology  
 LF = Linear feet (measurable unit)  
 LED = Light emitting diode  
 LS = Lump sum (measurable unit)  
 MDF = Main distribution frame  
 OWS = Oil/water separator  
 PA = Public address  
 P-lam = Plastic laminate  
 PRV = Pressure regulating valve  
 PTAC = Packaged terminal air conditioning



Psig = Pounds per square inch (pressure)  
 SS = Stainless Steel  
 PVC = Polyvinyl chloride  
 RTU = Roof top unit  
 RPBP = Reduced pressure backflow preventer  
 SF = Square feet (measurable unit)

UPS = Uninterruptible power supply  
 VAV = Variable air volume  
 VCT = Vinyl composite tile  
 VWC = Vinyl wall covering  
 VOIP = Voice over internet protocol  
 WAP = Wireless access point  
 WD = Wood

## List of Surveyed Facilities

**Table 1** lists the facilities surveyed during this project.

**Table 1. List of Surveyed Facilities**

Site	Facility	Address	Bldg Area (sf)
Boys and Girls Club	Boys and Girls Club	402 Second Street Snohomish, WA 98290	16,440
Carnegie Library	Carnegie Library	105 Cedar Avenue Snohomish, WA 98290	4,080
City Hall	City Hall	166 Union Avenue Snohomish, WA 98290	9,000
Claytown Park	Claytown Park	329 Avenue I Snohomish, WA 98290	-
Engineering Building	Engineering Building	112 Union Avenue Snohomish, WA 98290	1,960
Ferguson Park and Boat Launch	Ferguson Park Restroom	1330 Ferguson Park Rd Snohomish, WA 98290	625
Fischer Park	Fischer Park	1214 Madrona Drive Snohomish, WA 98290	-
Hill Park	Hill Park Restroom	1610 Park Avenue Snohomish, WA 98290	500
Hill Park	Lower Shelter Pole Building	1610 Park Avenue Snohomish, WA 98290	800
Hill Park	Upper Shelter Pole Building	1610 Park Avenue Snohomish, WA 98290	1,500
Morgantown Park	Morgantown Park	200 Long Street Snohomish, WA 98290	-
Pilchuck Park	Pilchuck Park Restroom	169 Cypress Avenue Snohomish, WA 98290	720
Police Station	Police Station	230 Maple Avenue Snohomish, WA 98290	6,800
Public Works Shop Site	Mechanics Building	1801 First Street Snohomish, WA 98290	5,040
Public Works Shop Site	Parks Storage Pole Building	1801 First Street Snohomish, WA 98290	2,000
Public Works Shop Site	Storage Pole Building	1801 First Street Snohomish, WA 98290	3,000



Site	Facility	Address	Bldg Area (sf)
Public Works Shop Site	Utilities Office Building	1801 First Street Snohomish, WA 98290	1,440
Public Works Shop Site	Water Sewer Storage Pole Building	1801 First Street Snohomish, WA 98290	1,800
Senior Center	Senior Center	506 Fourth Street Snohomish, WA 98290	7,680
Visitor Information Center	Visitor Information Center	1301 First Street Snohomish, WA 98290	800
Wastewater Treatment Plant	Blower Building	2115 Second Street Snohomish, WA 98290	1,200
Wastewater Treatment Plant	Chlorine Building	2115 Second Street Snohomish, WA 98290	1,000
Wastewater Treatment Plant	Lab Building	2115 Second Street Snohomish, WA 98290	2,600
Wastewater Treatment Plant	Mixture Building	2115 Second Street Snohomish, WA 98290	400

**Methodology**

The field survey team included architects & engineers with expertise in building assessment who reviewed civil, structural, architectural, mechanical, electrical, plumbing, and site infrastructure systems to a Uniformat Level 3 detail<sup>2</sup>. These descriptions and scores are the basis for generating the Facility Condition Index (FCI), and Weighted Average Condition Score (WACS). Costs were developed by an experienced cost estimator familiar with the regional construction market & construction practices. The costs shown in this report are based on market rates, and not on prevailing wage requirements from the State of Washington.

**Facility Condition Index (FCI)**

A Facility Condition Index (FCI) is an industry standard used for benchmarking and evaluating a portfolio of facility assets over time<sup>3</sup>. The FCI is the ratio between a facility’s Backlog of Maintenance and Repair (BMAR) and the Current Replacement Value (CRV) of the facility. Therefore, the lower the FCI, the lower the cost of maintenance backlog in relation to the cost of a full building replacement.

<sup>2</sup> <http://www.uniformat.com/index.php/classification-of-building-elements>

<sup>3</sup> Since 1999 GASB 34 has required government agencies to improve Basic Financial Statements, including periodic Condition Assessment of capital assets; subsequent protocols were developed by GSA, NASA, States, NCUBO and others with most sharing similar definitions of BMAR, CRV & FCI.



Common industry practice is to create a scale for interpreting the FCI as a way to prioritize facility needs. Most organizations adjust their classifications of FCI to relate to their own unique criteria. For this project, we suggest the following FCI breakdown to support decision making.

- Excellent = 0.00 – 0.05 (5%)
- Good = 0.06 – 0.10 (6% – 10%)
- Fair = 0.11 – 0.20 (11% – 20%)
- Poor = 0.21 – 0.25 (21% – 25%)
- Critical = 0.26 (26% or greater)

### Weighted Average Condition Score (WACS)

Every surveyed building is broken down into Uniformat categories, systems, and subsystems. The surveyors use standard criteria for scoring each subsystem from 1 to 5, where 1 is Excellent, and 5 is Unsatisfactory<sup>4</sup>. These subsystem scores are combined to a weighted average (based on importance) to the system level. A similar weighed calculation is performed at the category level, resulting in a 1-5 score for the building as a whole. This is called the Weighted Average Condition Score (WACS).

For both WACS and FCI, the lower the number, the better the condition, or relative condition.

**Table 2. FCI and WACS**

Facility	FCI	WACS
Boys and Girls Club	0.16	2.84
Carnegie Library	0.10	2.50
City Hall	0.11	2.56
Engineering Building	0.08	2.31
Ferguson Park Restroom	0.14	3.04
Hill Park Restroom	0.15	3.12
Lower Shelter Pole Building (Hill Park)	0.15	3.36
Pilchuck Park Restroom	0.19	3.26
Police Station	0.17	3.08
Senior Center	0.07	2.16
Upper Shelter Pole Building (Hill Park)	0.14	3.14
Visitor Information Center	0.08	2.35
<b>Public Works Shops</b>		
Mechanics Building	0.18	3.25
Parks Storage Pole Building	0.06	2.54
Storage Pole Building	0.2	3.96
Utilities Office Building	0.11	2.79
Water/Sewer Storage Pole Building	0.07	2.91
<b>Wastewater Treatment Plant</b>		

<sup>4</sup> A full description of the scoring metrics for all subsystems can be provided upon request.



Facility	FCI	WACS
Blower Building	0.05	2.07
Chlorine Room	0.08	2.53
Mixture Building	0.04	2.07
Office/Lab	0.08	2.31

**Summary Findings**

*Parks*

Many of the park facilities have experienced significant damage from vandalism. Some fixtures have been replaced with vandal-resistant versions, while some facilities have been closed to public use. Strategies to address vandalism are beyond the scope of this assessment, but it may be of value to the City to evaluate this issue to ameliorate the quality and feel of its public spaces.

*Boys and Girls Club*

The heating, cooling, thermal envelope, and ventilation systems at the Boys & Girls Club are a concern. The windows in the facility are non-operable, and the gym has no cooling system. There is limited HVAC service to the west half of the gym. At the time of survey, box fans were in use, though outside airflow is very limited. A deeper review and/or reconfiguration of this facility's HVAC system is recommended.

*Senior Center*

The Senior Center is experiencing issues with the HVAC system. Much of the equipment was recently replaced, but since then, several problems with functionality have arisen, including notably high energy bills. Some ductwork is loose in the non-heated attic which is contributing to the inefficiency. Test, adjust, and balance is suggested to test the performance of the duct work. Other repairs and adjustments may also be needed.



## Cost Overview

The individual buildings reports each include the following cost components:

**Deficiencies** – issues that are witnessed or inferred by surveyors or disclosed to them by City staff (such as a non-visible roof leak) that require action within 5 years and have a direct cost of at least \$5,000. The deficiency costs in the Facility Details Report show direct costs plus typical construction markups as well as project development markups (design, management, etc.).

**Predicted Renewal** – costs that are estimated based on the current condition of the system, where it is in its expected life span, and the rough cost-per-square-foot of replacing that system.

**Opportunity** – costs for improvements that are suggested but not required. These are often items that will increase energy efficiency or improve user experience.

Table 3 shows the total deficiencies, predicted renewals, and opportunity costs for each facility.

**Table 3. Total ODs and PRs by Facility**

Facility	Observed Deficiencies 2023-2028	Predicted Renewals 2029-2041
Boys and Girls Club	\$553,000	\$2,544,000
Carnegie Library	\$51,000	\$730,000
City Hall	\$1,040,000	\$3,273,000
Engineering Building	\$47,000	\$477,000
Ferguson Park Restroom	\$35,000	\$39,000
Hill Park Restroom	\$115,000	\$28,000
Lower Shelter Pole Building	\$36,000	\$26,000
Upper Shelter Pole Building	\$21,000	\$45,000
Pilchuck Park Restroom	\$160,000	\$36,000
Police Station	\$584,000	\$1,695,000
Senior Center	\$173,000	\$1,686,000
Visitor Information Center	\$63,000	\$116,000
<b>Public Works Shops</b>		
Mechanics Building	\$925,000	\$572,000
Parks Storage Pole Building	\$16,000	\$74,000
Storage Pole Building	\$44,000	\$42,000
Utilities Office Building	\$61,000	\$178,000
Water/Sewer Storage Pole Building	\$14,000	\$32,000



Facility	Observed Deficiencies 2023-2028	Predicted Renewals 2029-2041
<b>Wastewater Treatment Plant</b>		
Blower Building	none	\$157,000
Chlorine Room	none	\$78,000
Mixture Building	none	\$42,000
Office/Lab	\$85,000	\$297,000

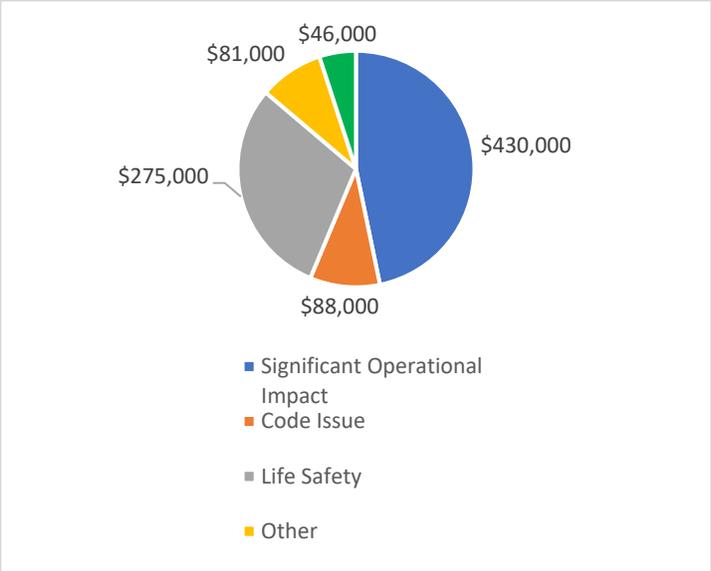
**Observed Deficiencies**

For a notable issue to be considered an Observed Deficiency (OD), the surveyor must think that the issue needs to be addressed within the next 5-year period, with an expected direct cost of \$5,000 or greater. Each deficiency is assigned an action type to help prioritize the order in which it should be addressed. The following pie chart shows the ODs broken out by action type.

For the 2023 FCA, ODs total approximately \$37.6M.

Priority ODs are those in the “Life Safety” and “Code Issue” categories, which total approximately \$1.6M. Detailed descriptions, photos, and cost estimates of these deficiencies can be found in the Facility Details Report (Volume 2).

**Figure 1. Deficiencies by Action Type**

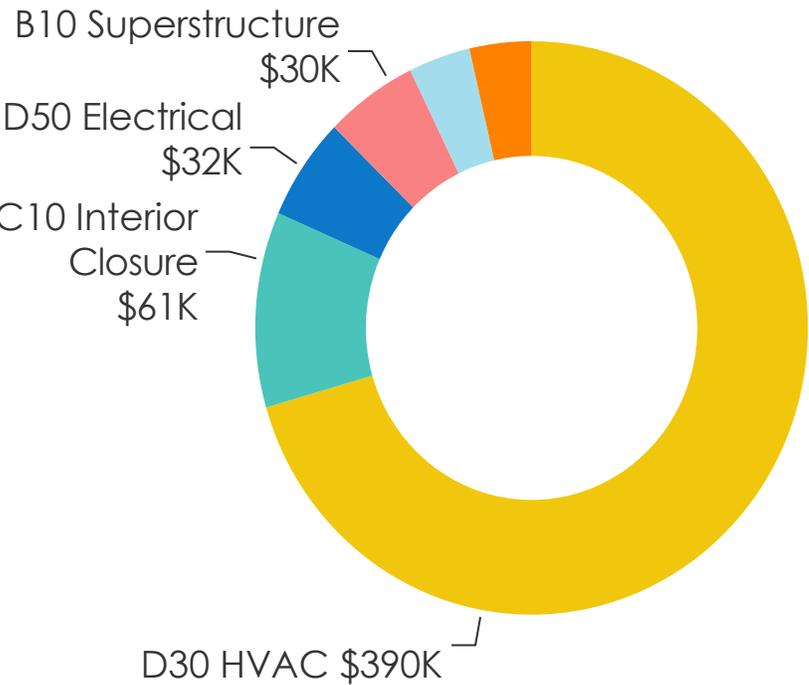


Pages 8 to 18 show a graphic representation of the ODs by Site, broken out to Uniformat Level 2 Systems. These graphics can be viewed in greater detail in the Microsoft BI Dashboard that accompanies this report.

As is shown in **Figure 1**, most of the City's deficiencies fall within the Significant Operational Impact category. Items in this category range from heating and cooling systems at the Boys and Girls club to door and door hardware at several park facilities. The largest contributor relates to the relocation the public works shop's site to an area that is not at risk of flooding.



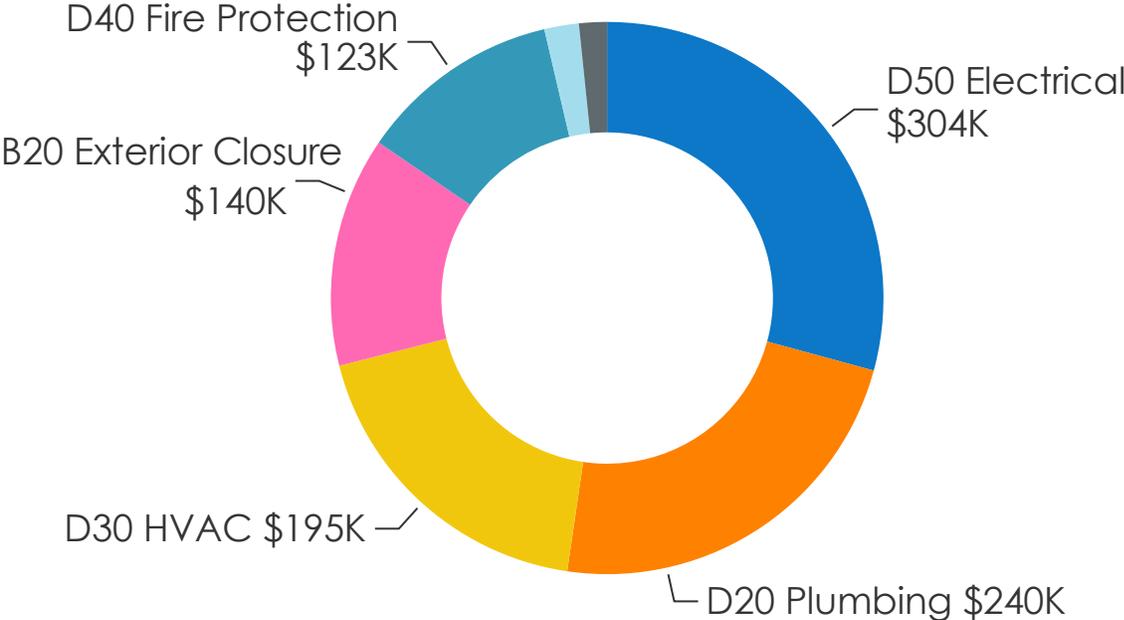
# Boys and Girls Club



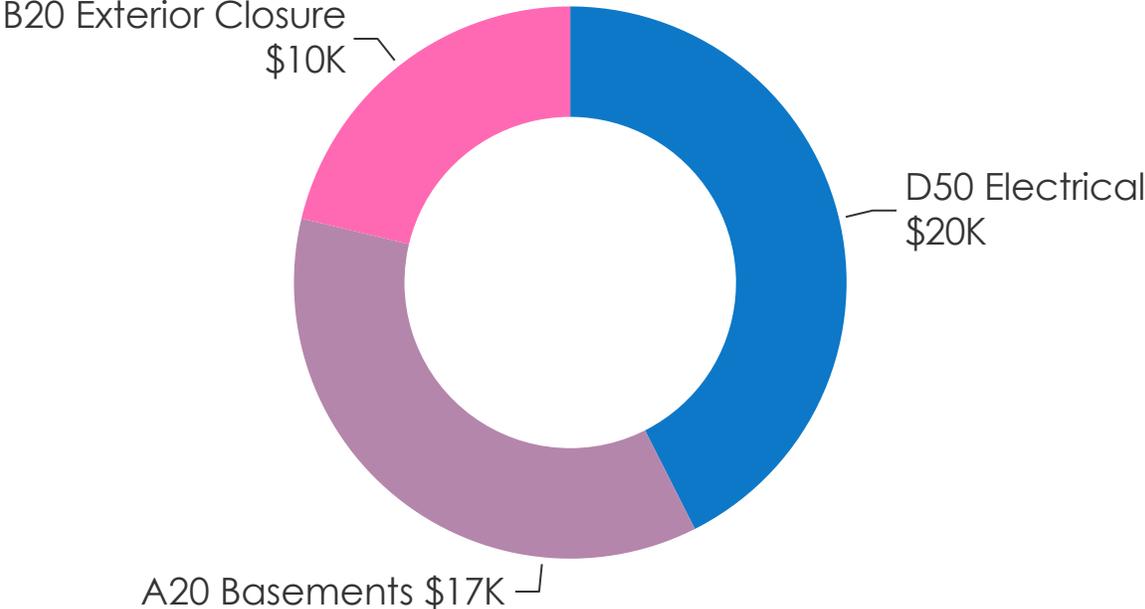
# Carnegie Library



# City Hall



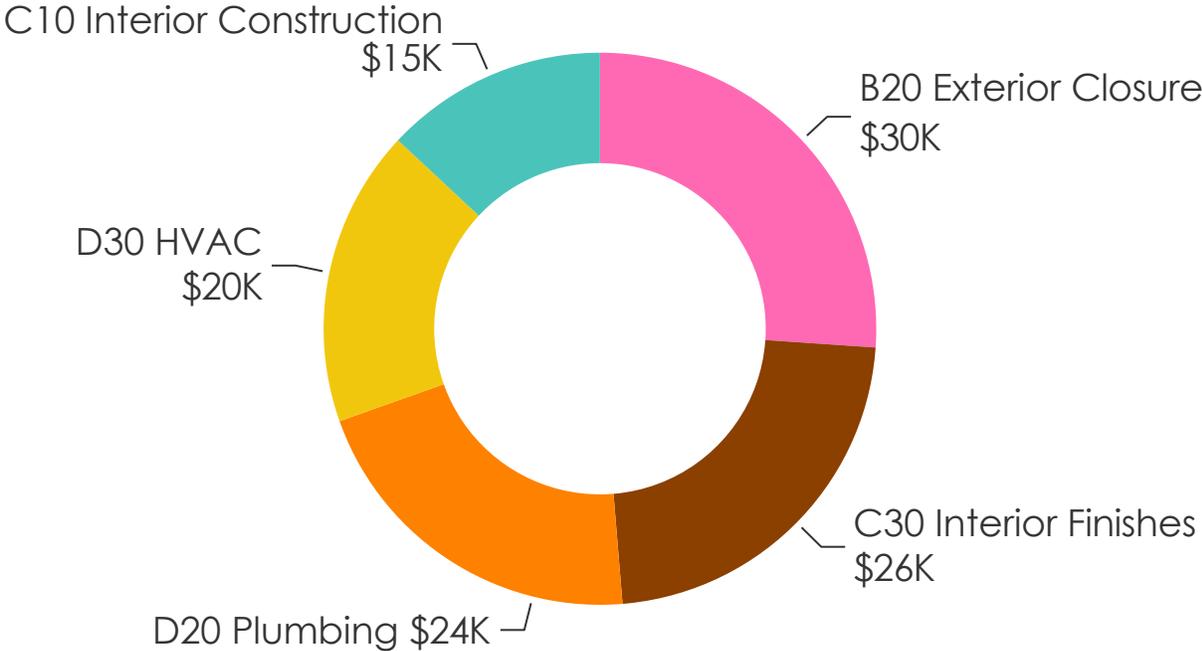
# Engineering Building



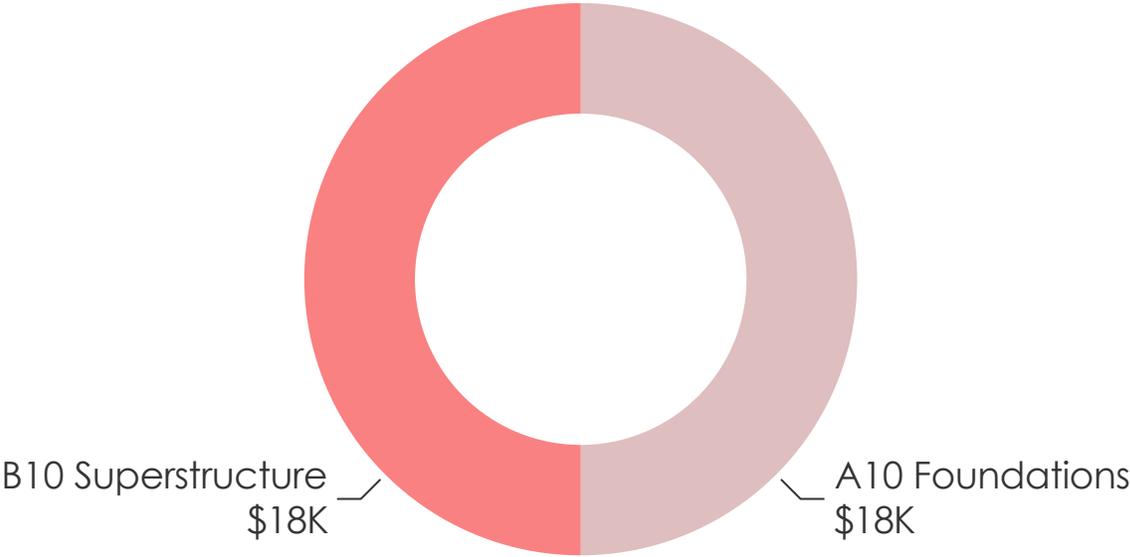
# Ferguson Park Restroom



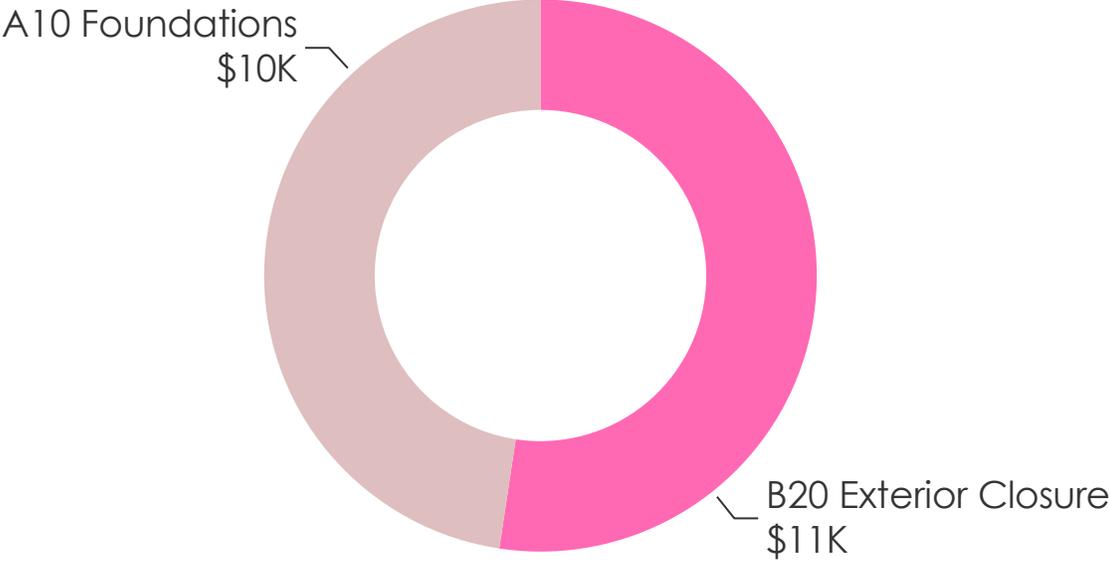
# Hill Park Restroom



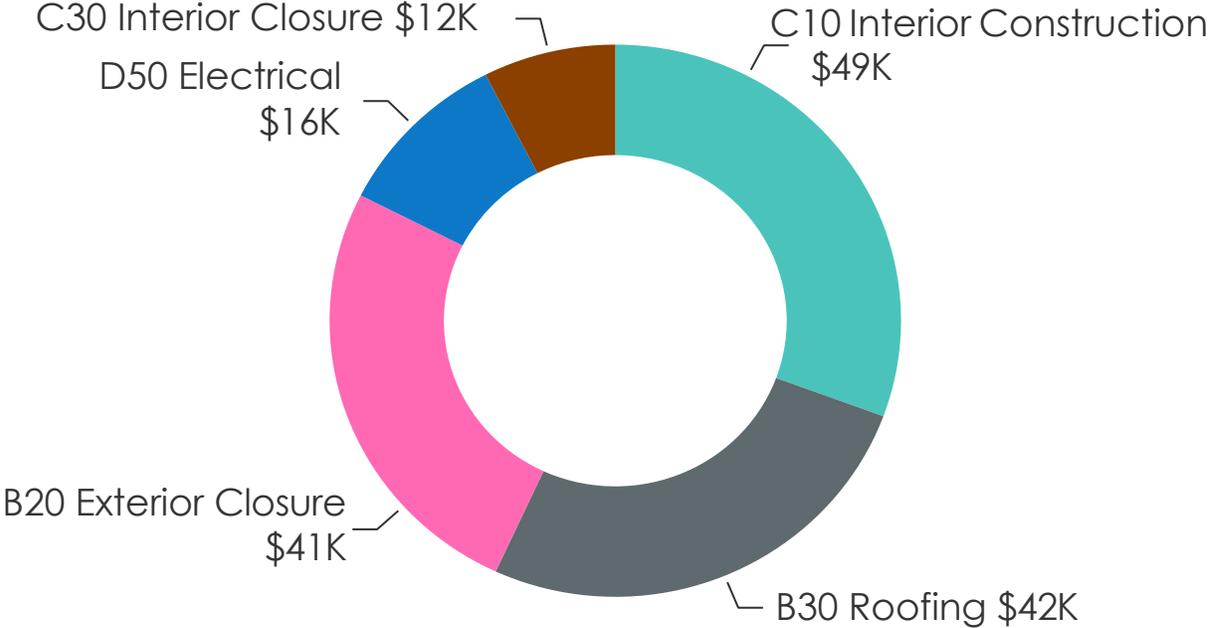
# Lower Shelter Pole Building



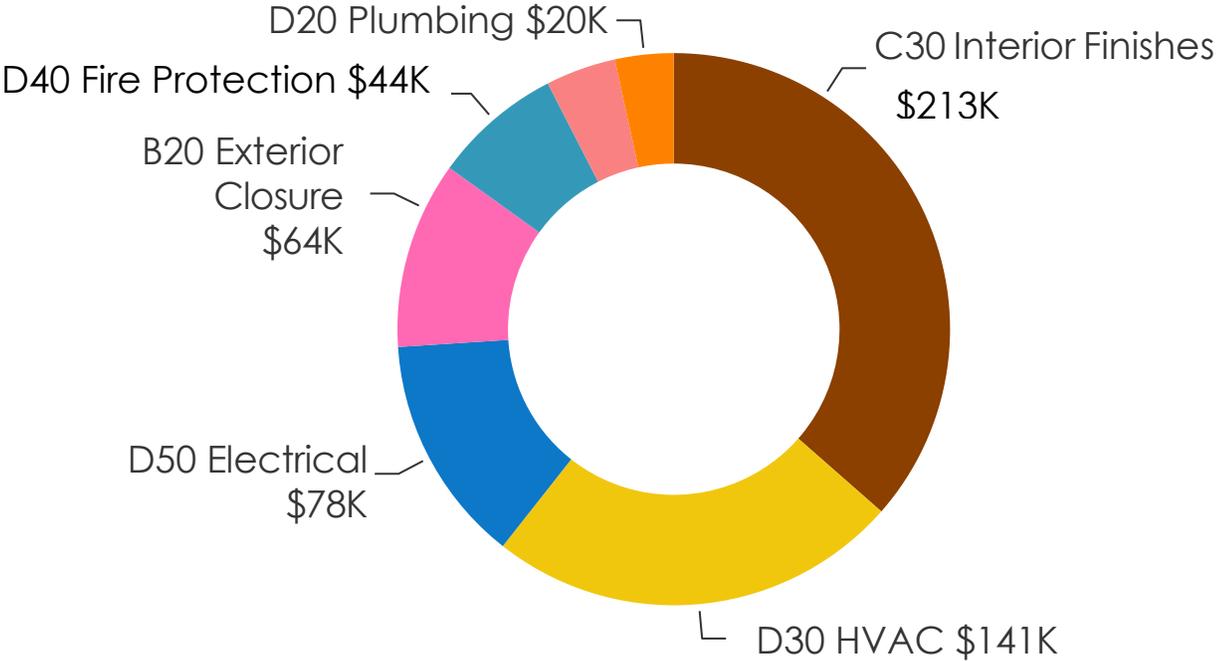
# Upper Shelter Pole Building



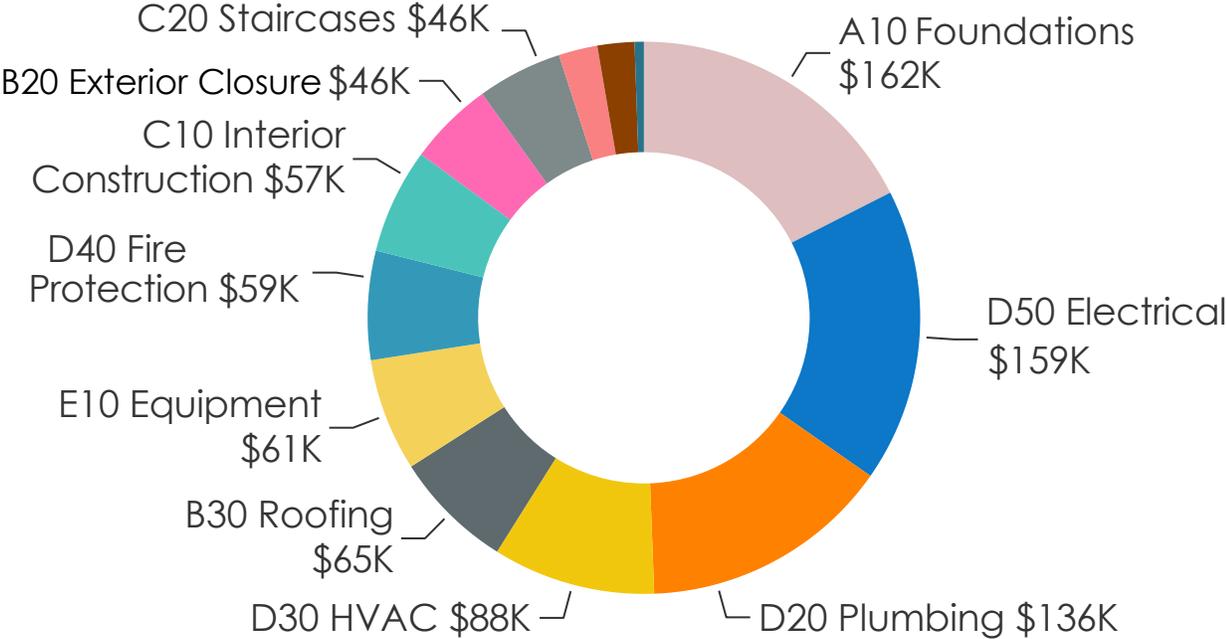
# Pilchuck Park Restroom



# Police Station



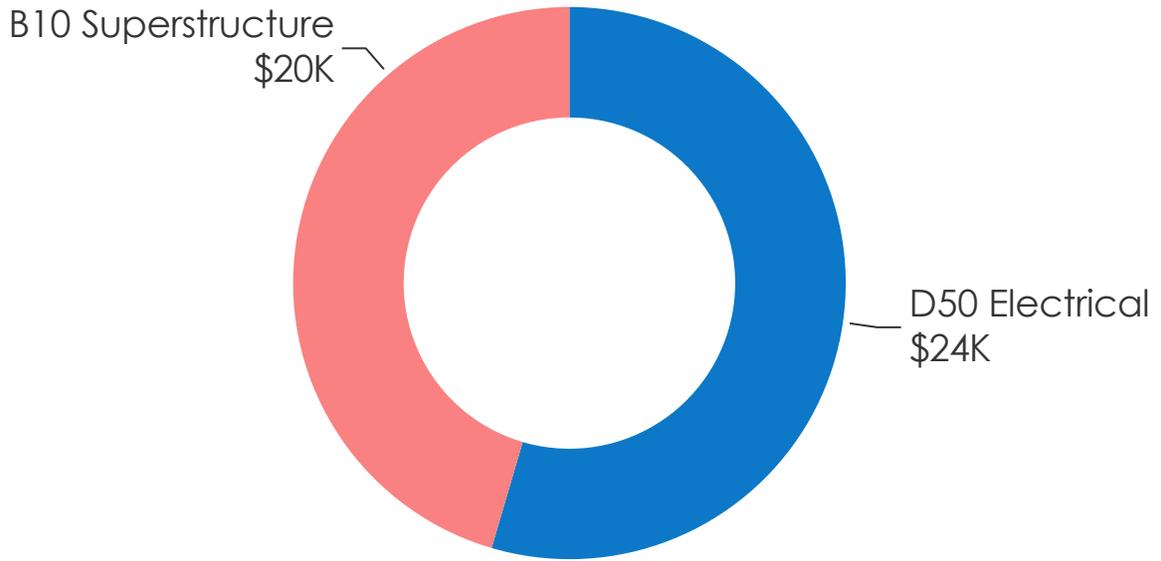
# Mechanics Building



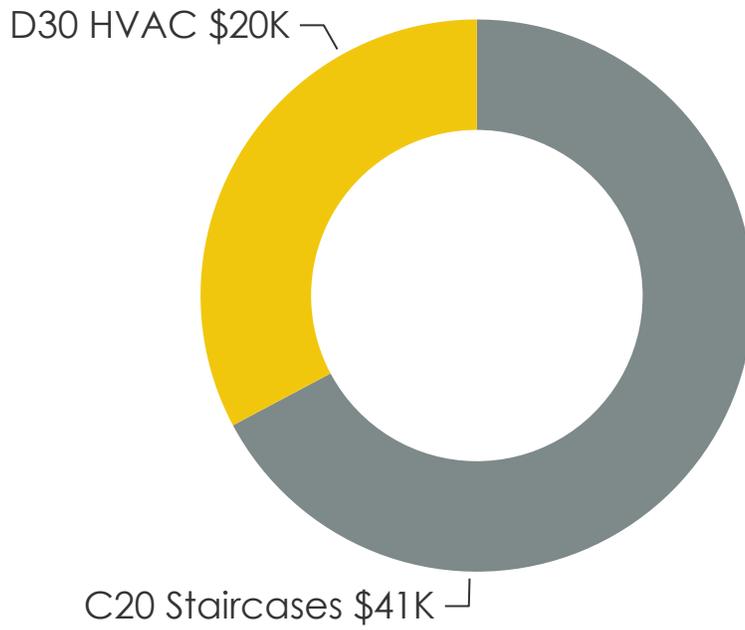
# Parks Storage Pole Building



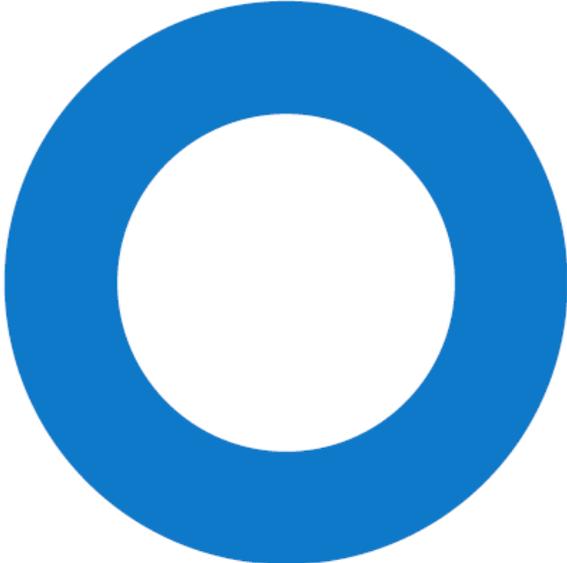
## Storage Pole Building



## Utilities Office Building

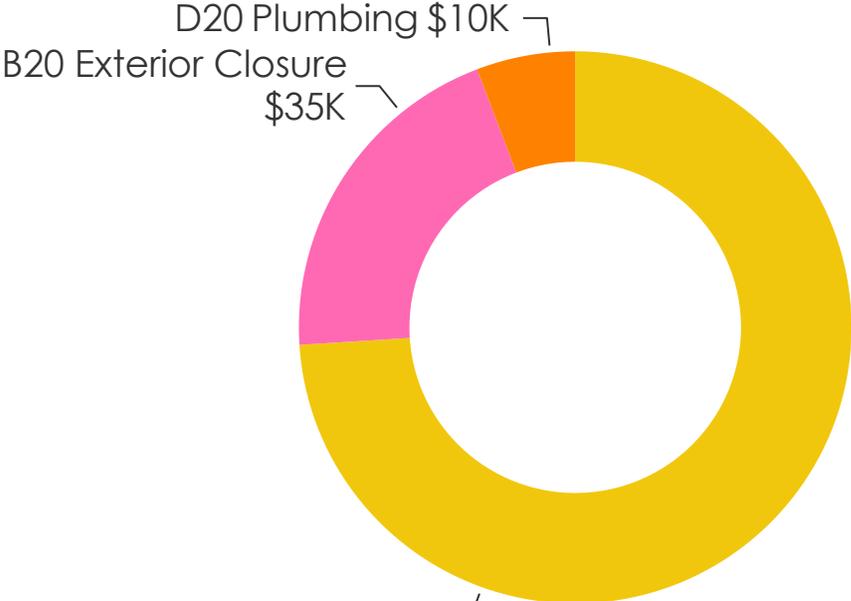


# Water/Sewer Storage Pole Building



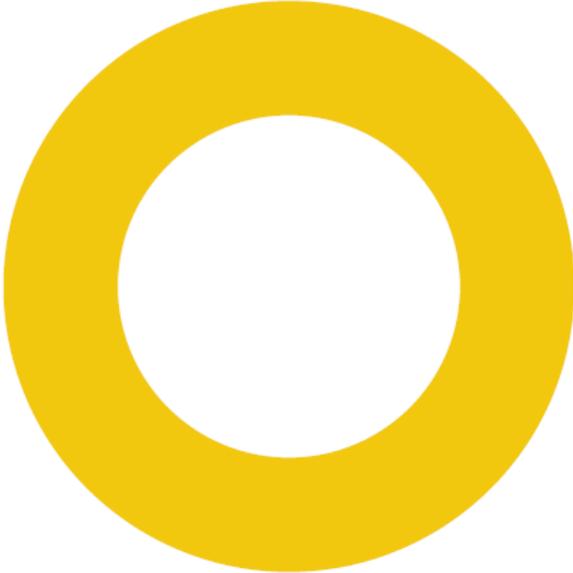
D50 Electrical \$14K

# Senior Center



D30 HVAC \$128K

Visitor Information Center

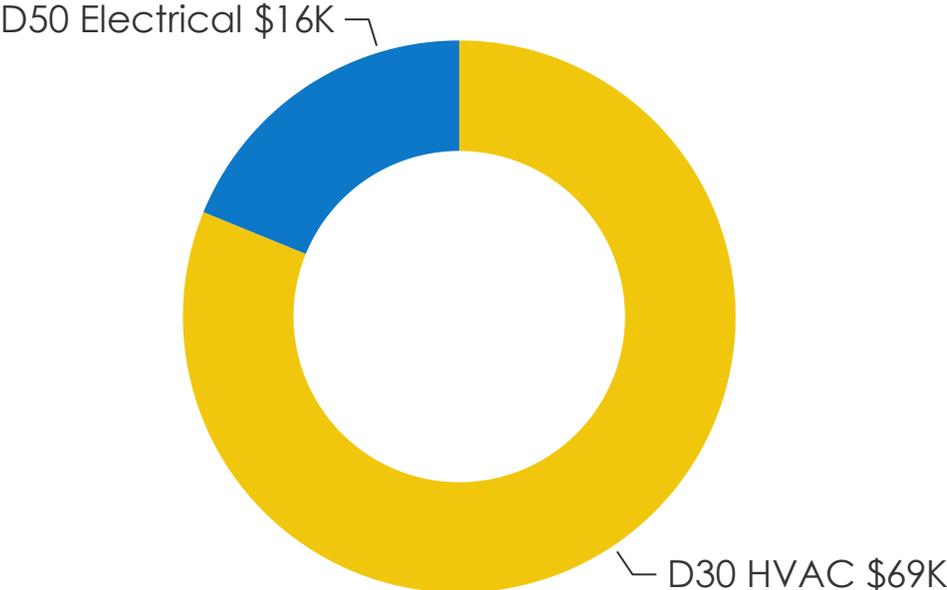


└ D30 HVAC \$63K

Blower Building

N/A

Office/Lab

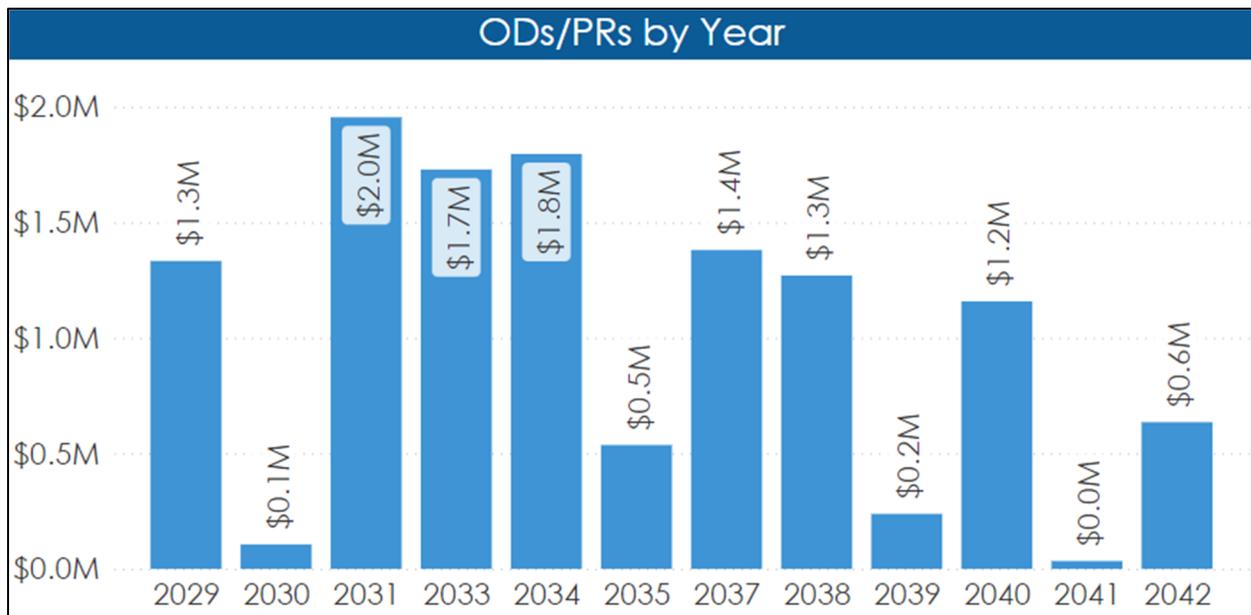


## Predicted Renewals

Predicted Renewals (PRs) are modeled for the years 2029 – 2042, based on the system type, age, current condition, expected useful life, and anticipated replacement cost. These costs are based on predictive models, and therefore should be used as a high-level, long-term planning tool. Some systems may fail sooner or last longer than the model predicts based on maintenance practices, intensity of use, or extreme weather events.

For the time period of 2029 – 2042, the estimated PR cost is approximately \$12M. The highest cost year is expected to be 2031 at just under \$2M. The detailed PR table included in the Appendix shows these PRs broken out by facility, subsystem, and year. Years omitted from the chart below have no predicted renewals occurring in that year.

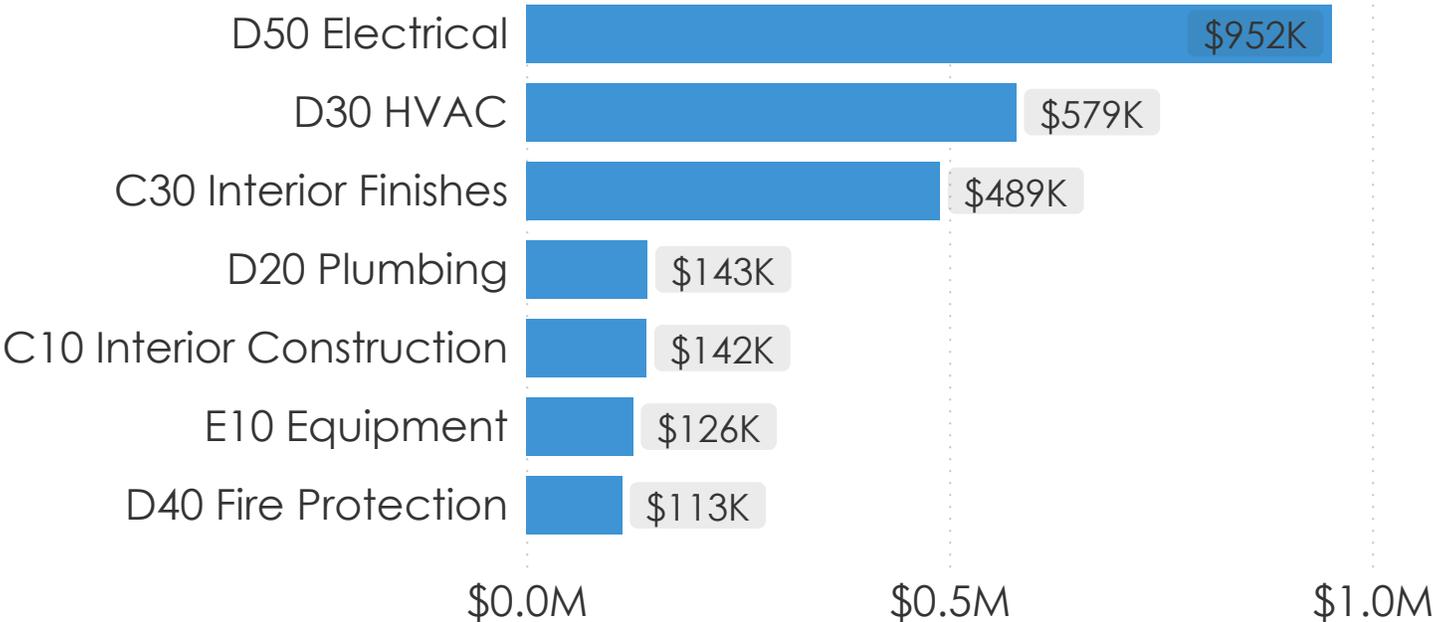
**Figure 2. Predicted Renewal Totals by Year**



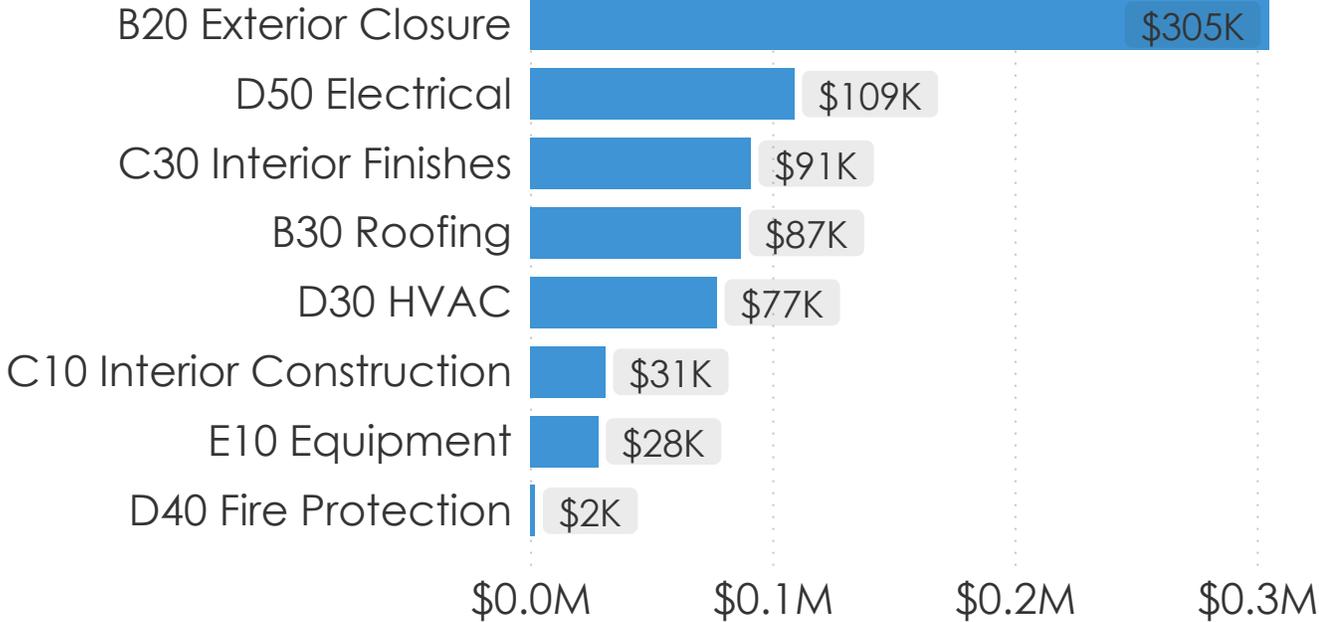
Pages 20 to 30 show a graphic representation of the total predicted renewals by site, broken out by Unifomat Level 2 categories.



### Boys and Girls Club



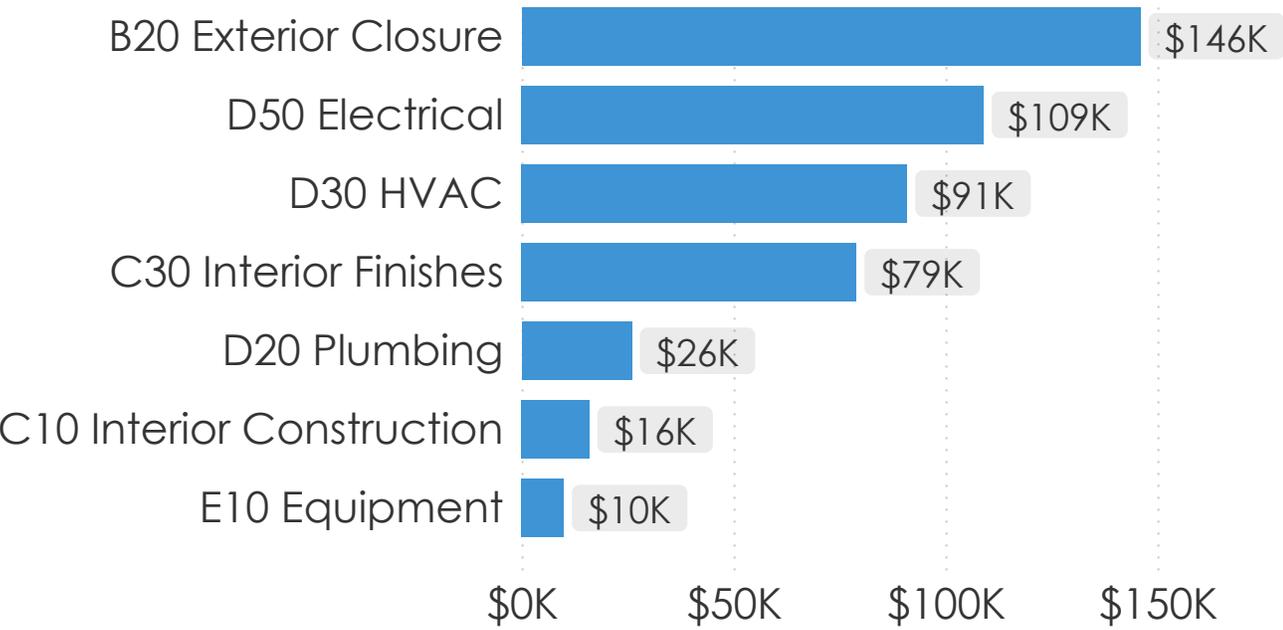
### Carnegie Library



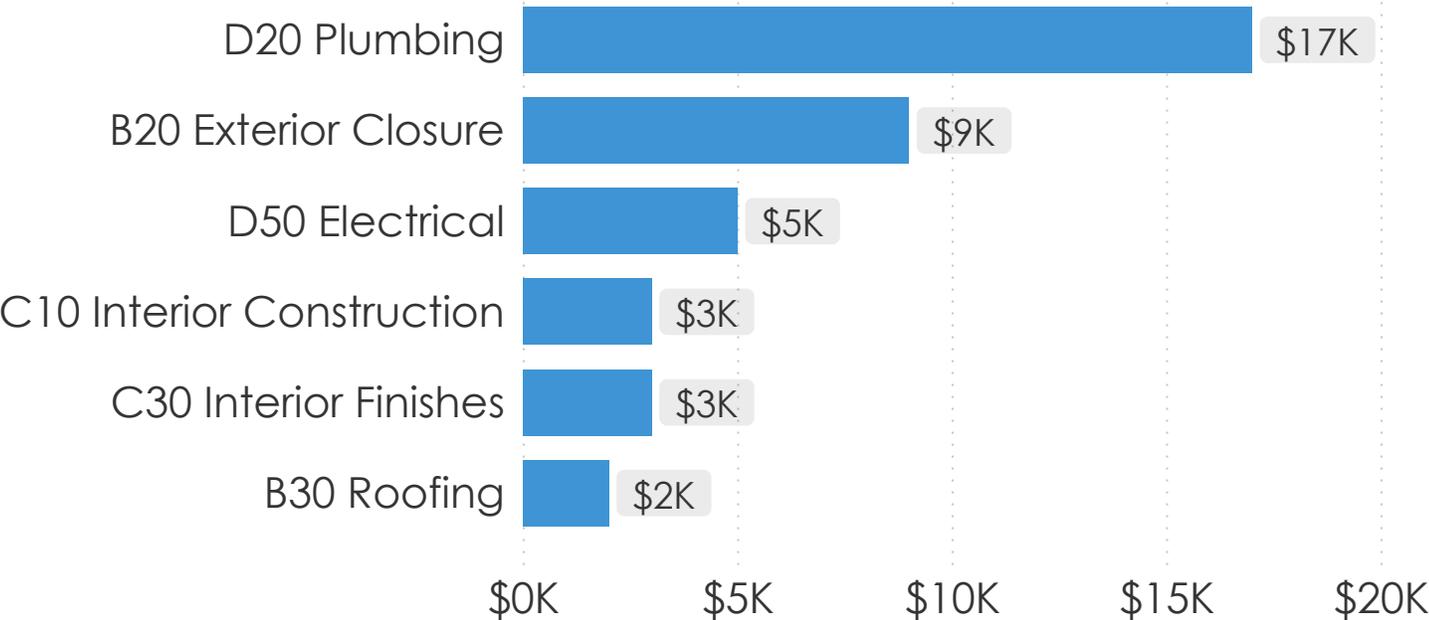
# City Hall



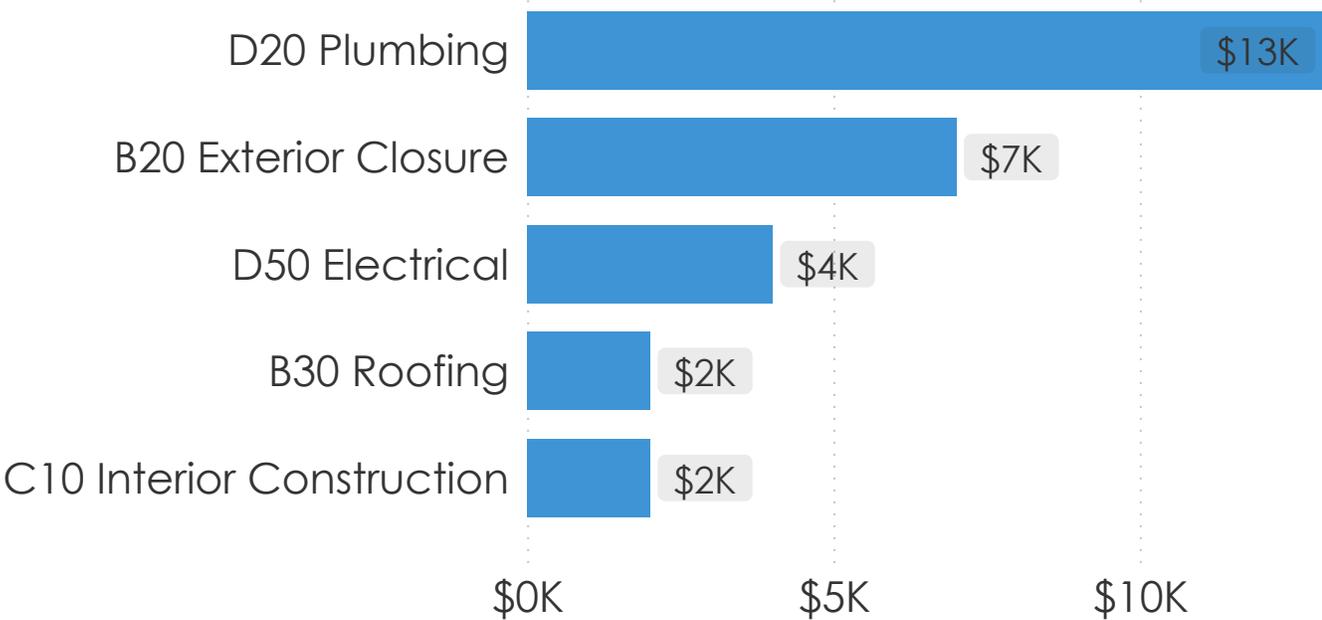
# Engineering Building



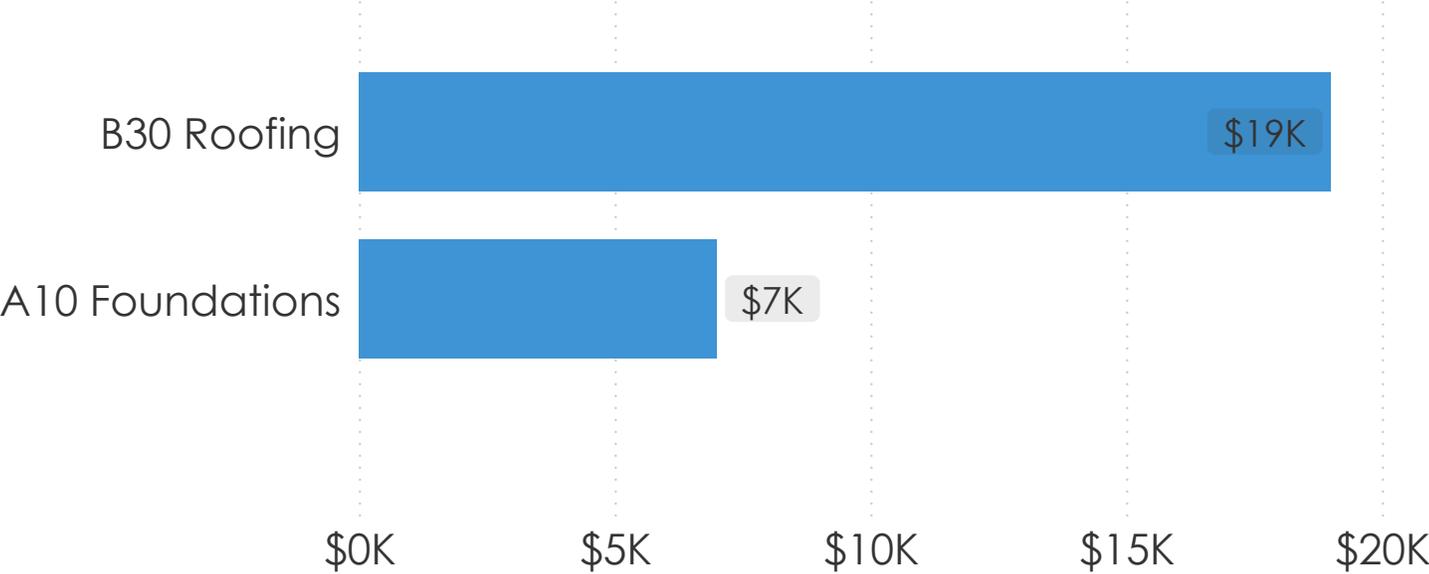
### Ferguson Park Restroom



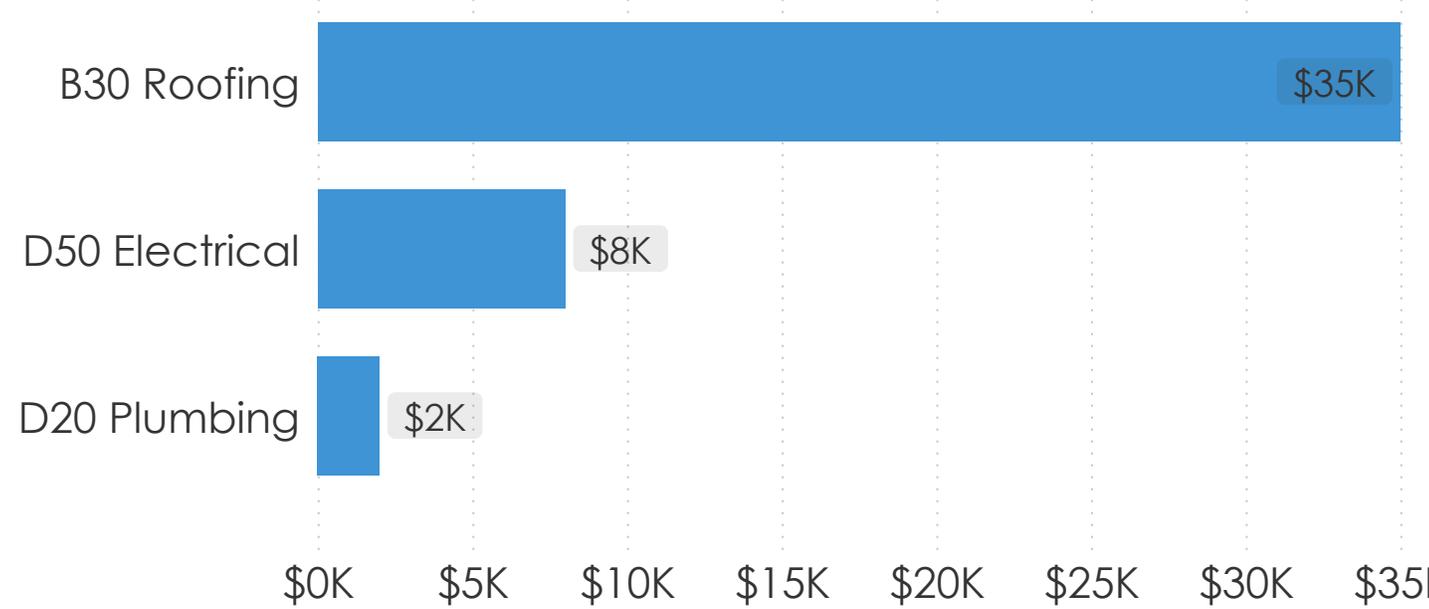
### Hill Park Restroom



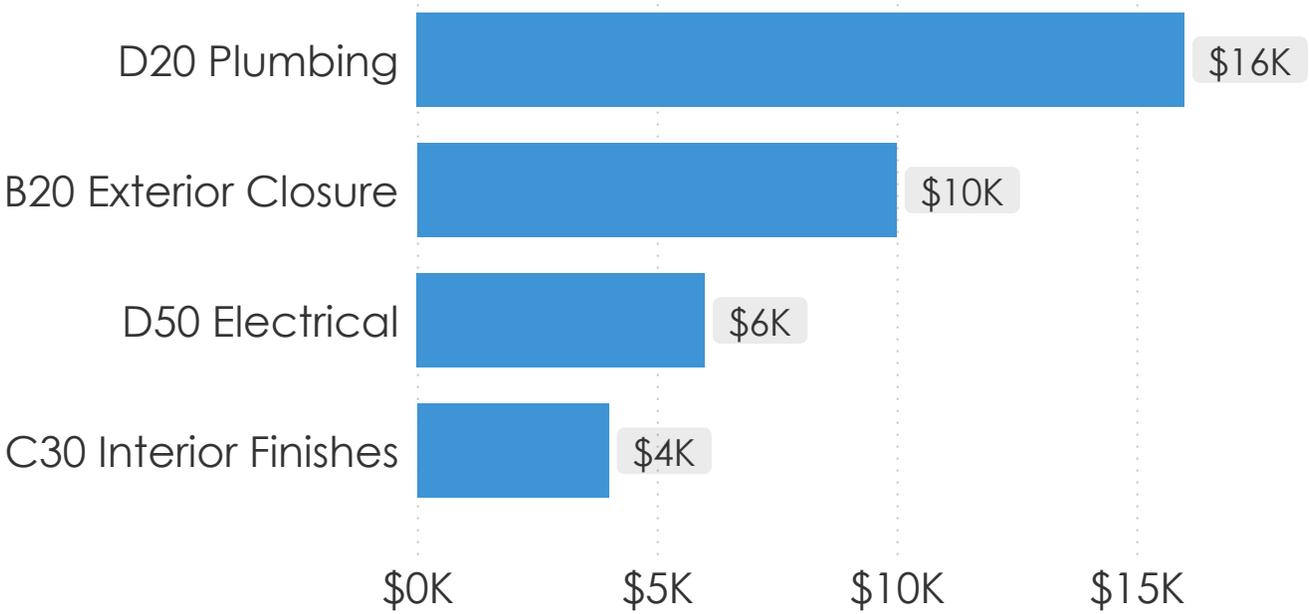
### Lower Shelter Pole Building



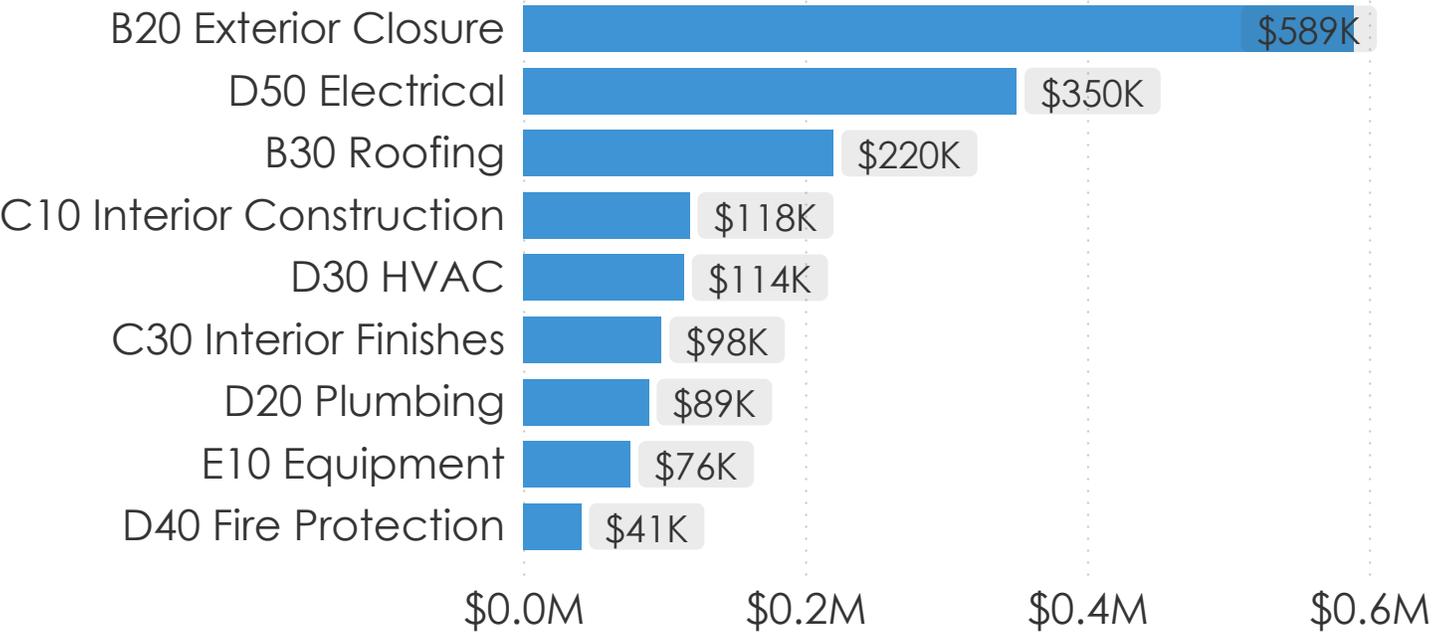
### Upper Shelter Pole Building



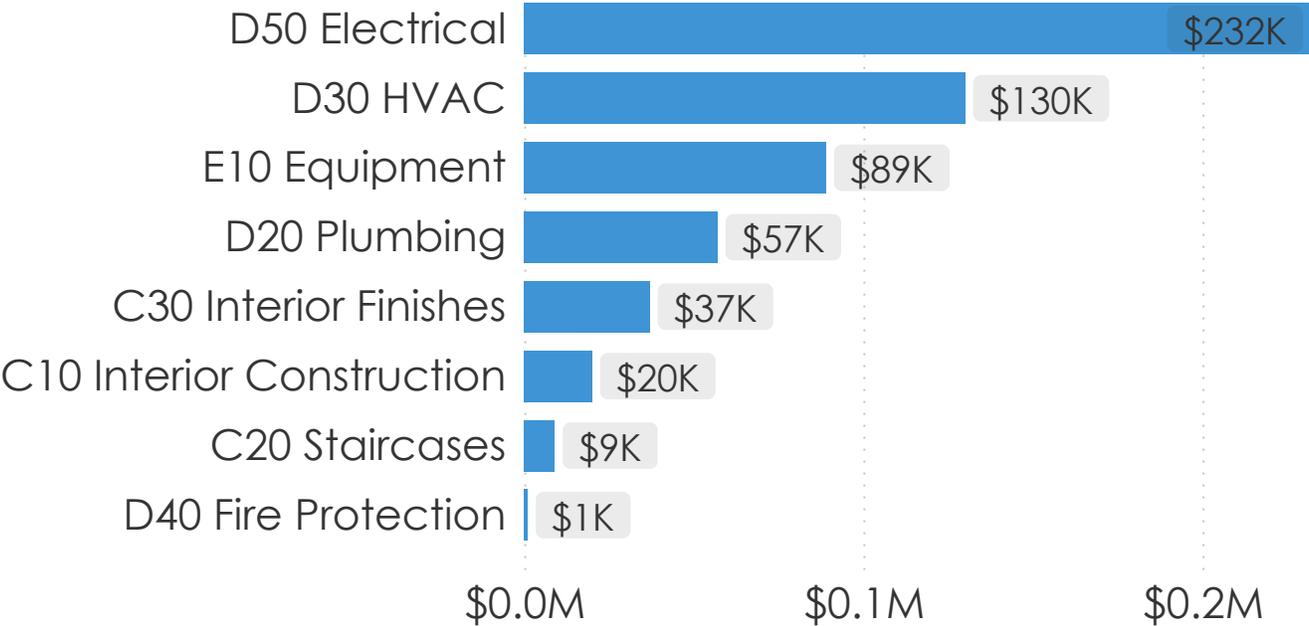
# Pilchuck Park Restroom



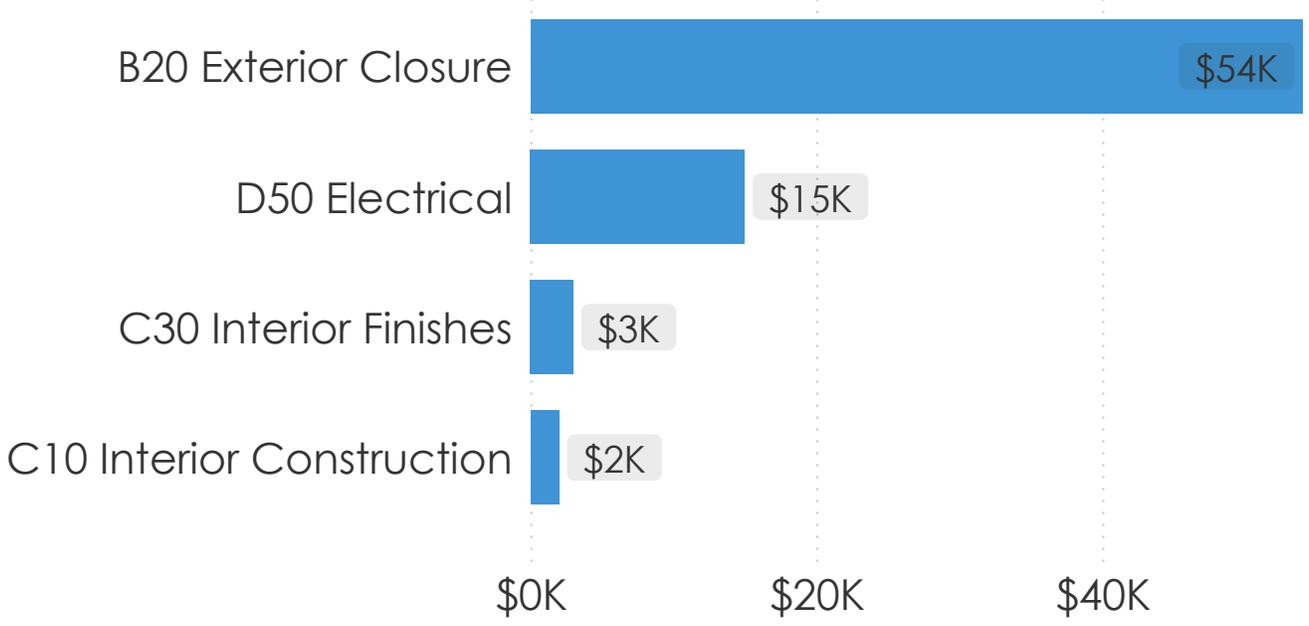
# Police Station



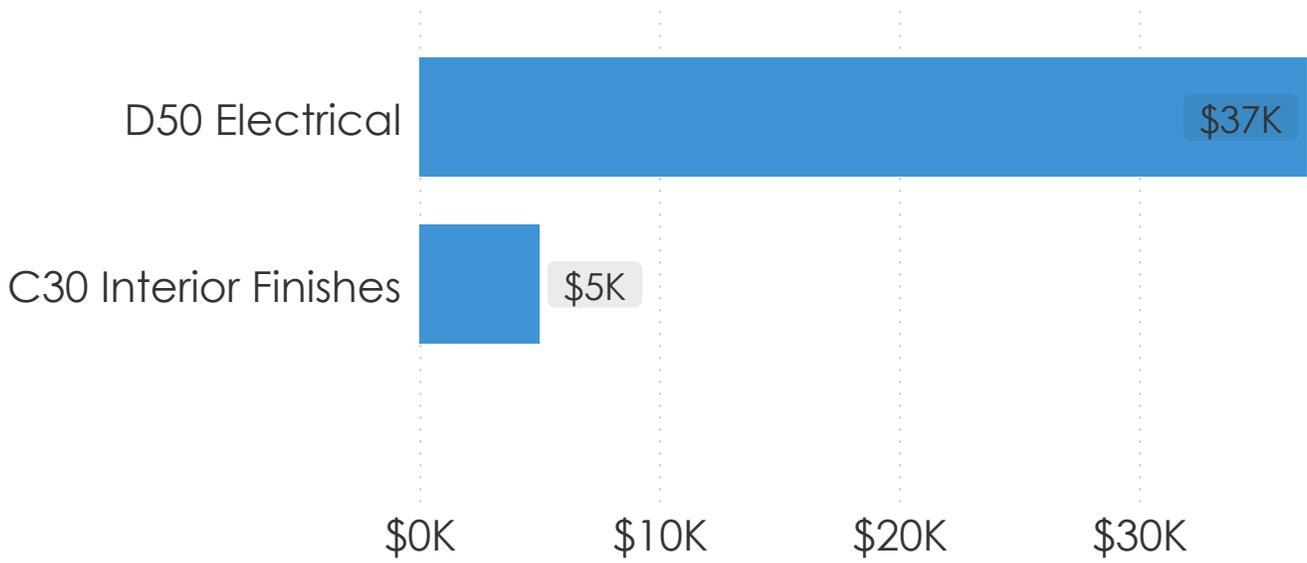
### Mechanics Building



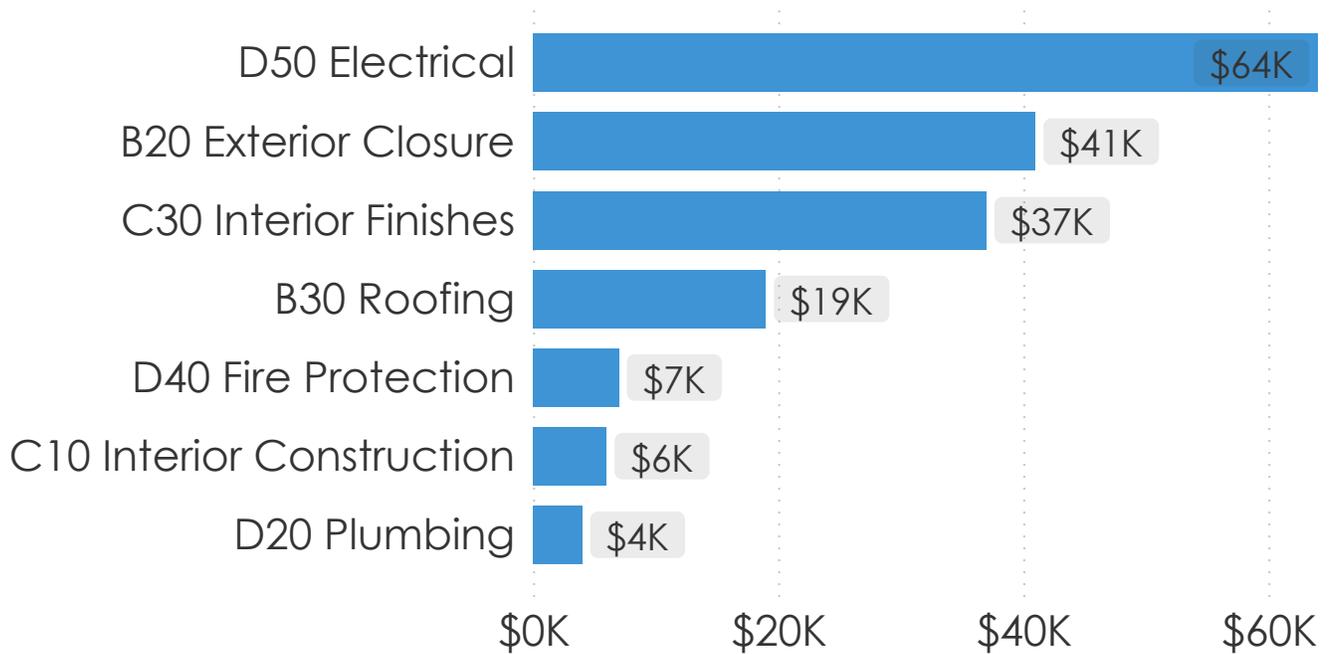
### Parks Storage Pole Building



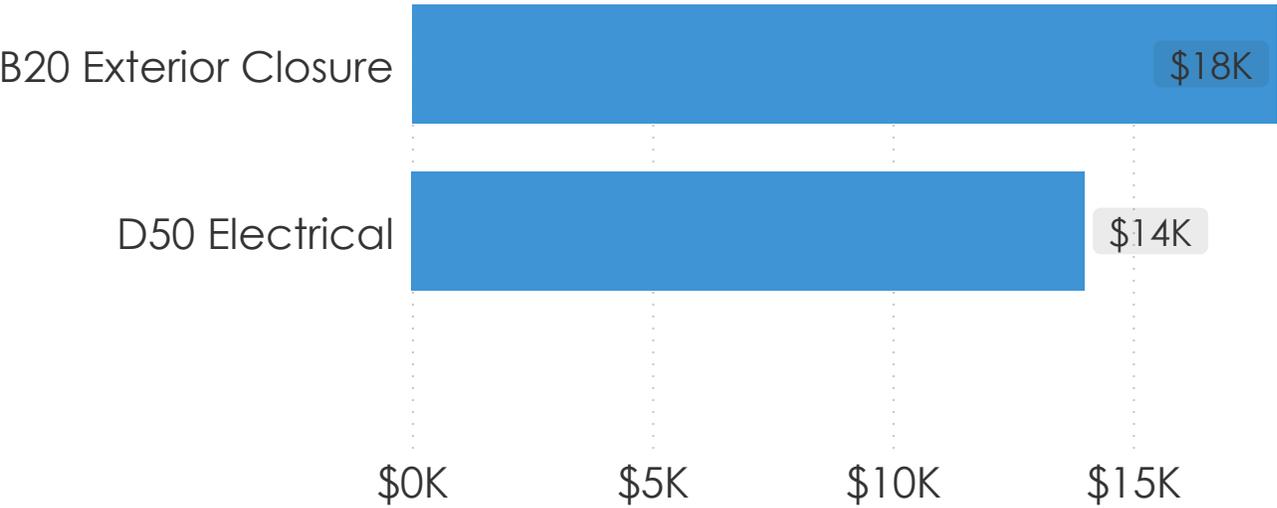
## Storage Pole Building



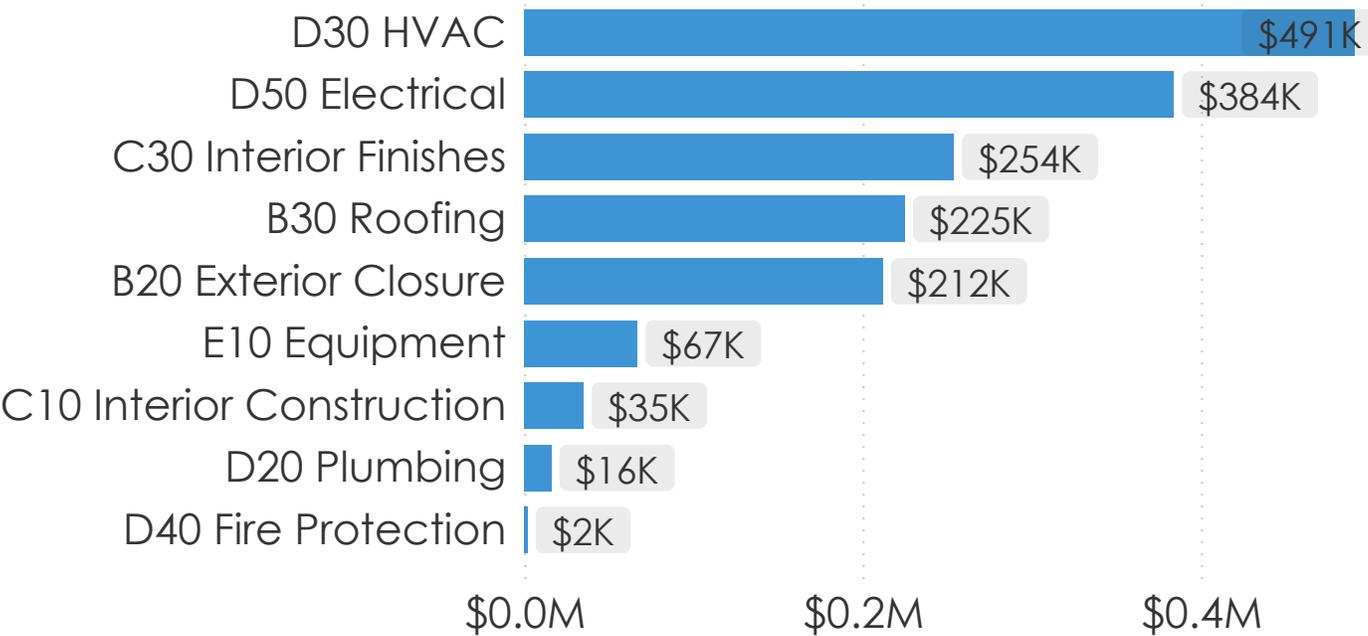
## Utilities Office Building



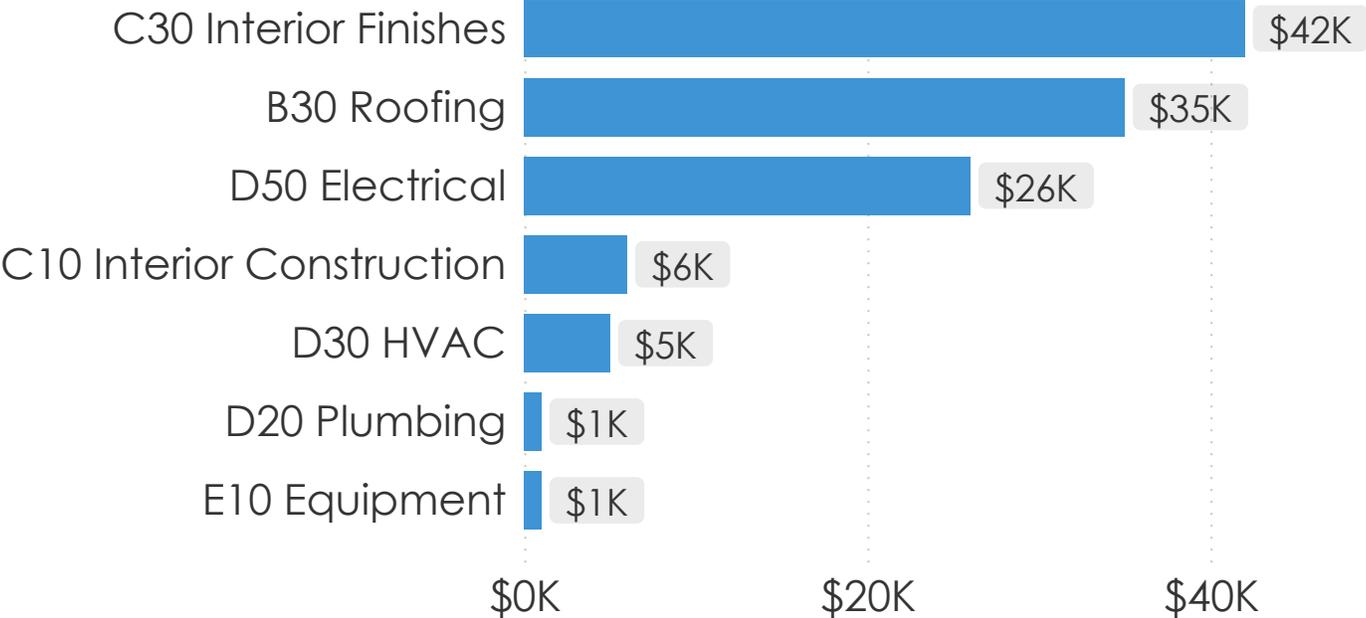
# Water/Sewer Storage Pole Building



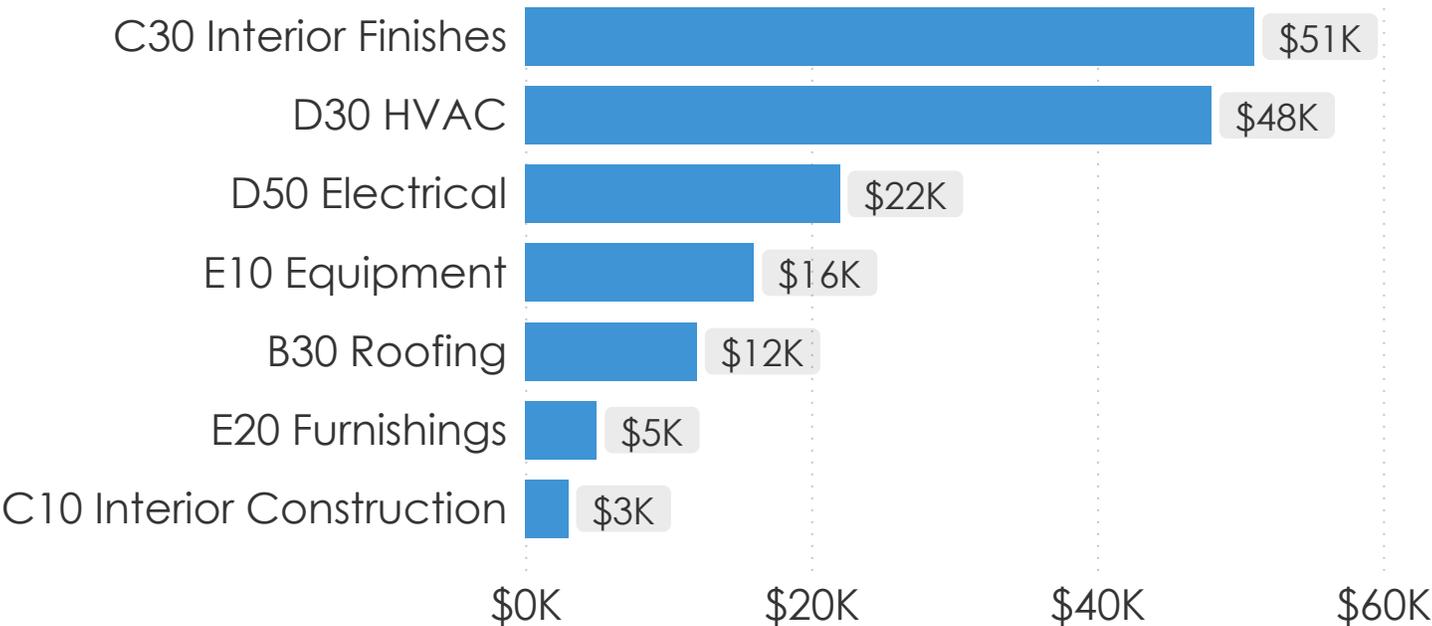
# Senior Center



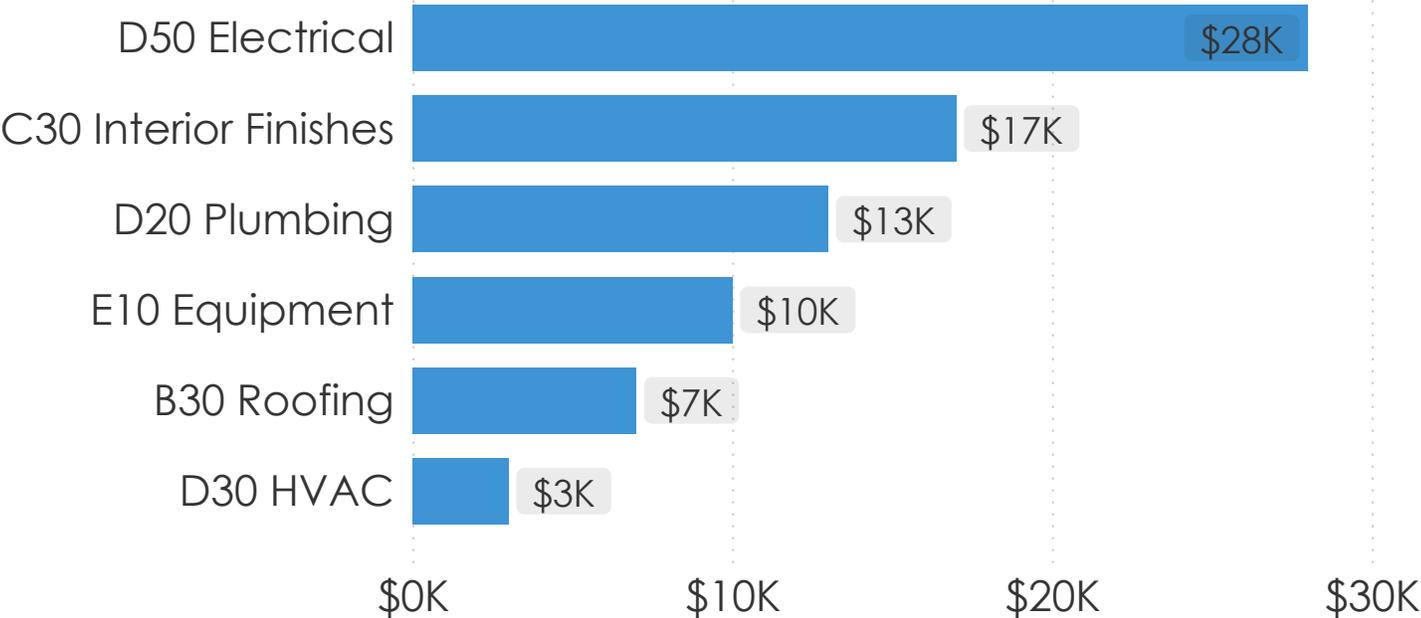
# Visitor Information Center



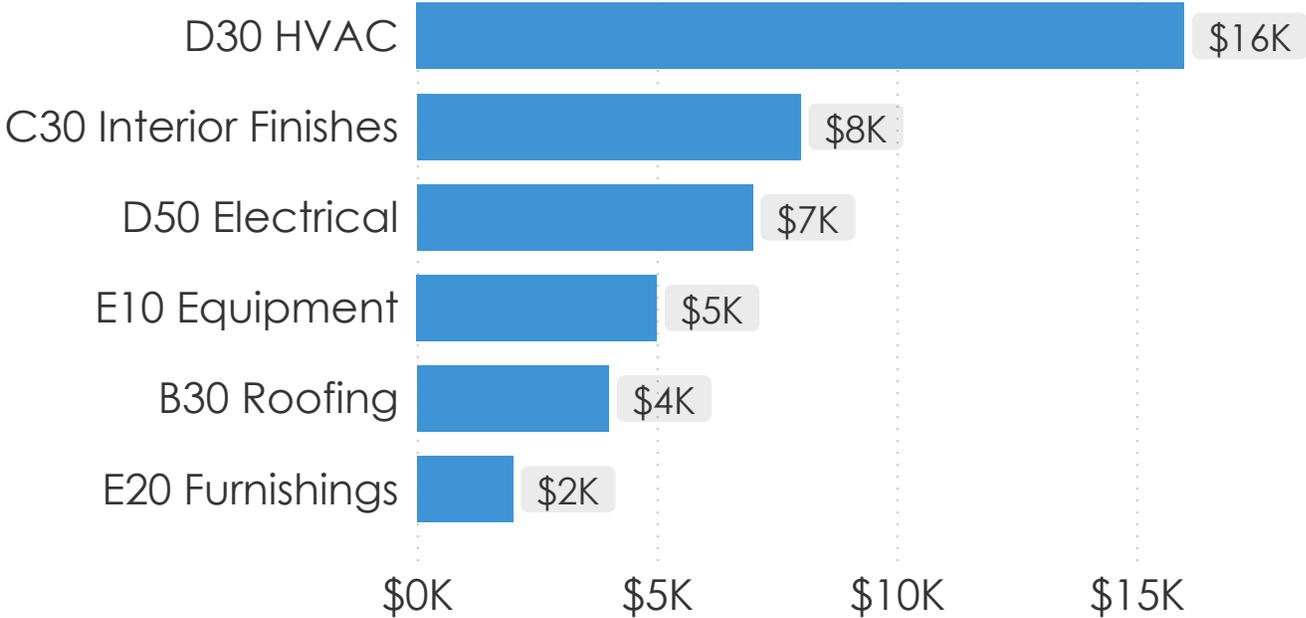
# Blower Building



### Chlorine Room



### Mixture Building



# Office/Lab

