



South Seattle Community College

# AUTOMOTIVE TECHNOLOGY BUILDING RENOVATION

**2009-2011  
Renovation Project Request**  
5 December 2007



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## 1.0 EXECUTIVE SUMMARY

### 1.1 Problem Statement

The Automotive Technology program is one of the primary technical programs offered at South Seattle Community College. Although the program has grown substantially and the technology needed in the shops and classroom has changed greatly since 1970, the program is housed in one of the oldest buildings on campus which has had no significant upgrades, improvements, or modernizations.

The Automotive Technology Program at SSCC is unique among similar programs in that it is the primary source for training technicians specifically for independent repair stations. The SSCC program is also differentiated by the high degree of diversity of its student body, its primary location near an economically depressed community, and its broad market program ranging from entry level/six month certification to more advanced training providing a full “ladder” up to an AAS degree. SSCC has also been quite successful in integrating basic educational skills into its automotive programs under the I-BEST model. This close integration of basic education with trades is best served by separate classrooms located in close proximity to the shops, a need that cannot be met with the existing facility.

As envisioned in the SSCC Strategic Plan, the Automotive Technology program is expected to expand its focus to include specialization in sustainable transportation technology. This includes providing classes in hybrid power plant repair, emissions reduction certification, and bio-fuel modification technology. It is critical that the program and its facility also provide a model of sustainable repair practices which the current building cannot support.

The existing facility negatively impacts the effectiveness of the current program and is incapable of supporting the envisioned future program development due to an inadequate instructional area, inherently poor relationships between shops/classrooms, and the inflexibility of the basic design. Also through the years, spaces originally designed as vehicle bays have been changed to house needed functions that were not originally planned, such as hazardous materials collection, and parts storage. Without significant renovation and select additions, the existing Automotive Technology Building will be unable to support the program’s evolved instructional methodologies.

Due to age and intense use, the building has developed numerous intractable deficiencies, some which compromise occupant safety and others that drain maintenance resources. Current deficiencies in the infrastructure also have negative impact on the health, safety, and welfare of the students. The existing air systems are at the end of their useful life and do not provide adequate ventilation and control of carbon monoxide. There is inadequate infrastructure for control and collection of hazardous materials leading to the continuation of old non-sustainable practices. The structure is comprised of pre-cast concrete with open clerestory windows creating significant seismic weakness and water intrusion problems. When built, there was minimal participation of female students in the automotive trades, thus female students do not have access to the same support facilities



as male students. Other amenities common to college facilities such as areas for student interaction and small-group study spaces, are unavailable in the existing building.

## **1.2 Proposed Solution**

The proposed solution is to renovate the 34,120-gsf of the existing Automotive Technology Building to correct inefficiencies and infrastructure deficiencies and infill an existing service courtyard with an 11,470-gsf 2-story addition to address the space shortfall. By placing new classrooms in the addition they can be located in direct adjacency to the shops. The existing shops can be reconfigured to include more teaching stations (greater number of vehicle bays) and better access to more centralized support functions. The infill addition will also provide for the needed student support and faculty offices that do not currently exist. Lastly, the renovation will correct infrastructure and systems needs at the same time insuring compliance with health and safety standards.

## **1.3 Programs Addressed by the Project**

This project will correct space and facility deficiencies impacting the Automotive Technology Program.

## **1.4 Probable Cost Summary**

It is estimated the MACC for the proposed project will total \$10,165,000 with total project costs estimated at \$17,604,000. These costs are escalated to bid date of September 2011.

## **1.5 Project Schedule**

January 2008 – July 2008	Predesign
July 2009 – June 2011	Design
August 2011 – April 2013	Construction
June 2013	Occupancy for classes

## **1.6 Funding**

It is proposed the project be funded by state appropriation.

## **2.0 SCOPE AND PROJECT DESCRIPTION**

### **2.1 Project Description**

The proposed solution to correct space deficiencies and facility deficiencies is to substantially renovate the existing 34,120-gsf Automotive Technology Building and to construct a two-story addition of 11,470-gsf infilling the existing service courtyard. The 2-wing configuration of the existing building will allow a sequence of work permitting half of the building to remain occupied during construction.

Renovated and new facilities receive new systems and equipment to enable technology integration and real-world training. The structural system, particularly at existing clerestory windows and roll-up doors, will be seismically strengthened. The entire facility will be brought into compliance with current codes and LEED sustainability requirements. Combined, these solutions resolve the physical deficiencies and provide



essential program space needed for the immediate and foreseen needs of the Automotive Technology program.

The proposed concept plan maximizes the usefulness of existing shop/labs by reconfiguring the high-bay areas to create additional vehicle workstations. These will be tailored to unique instructional methodologies. The infill addition will provide ground floor industrial classrooms with direct adjacency to the vehicle shop/lab. This will facilitate integration of basic and technical education without the disruption caused by moving to a remote classroom. The north area of the existing building will be reconfigured to provide additional secure and general storage spaces and a centralized tool crib. Aged-out mechanical and instructional equipment will be replaced to alleviate health and safety deficiencies and maximize "real-world" training. With this renovation, the effective life of the complex is expected to extend well over 30 years.

## 2.2 Program Summary

The Automotive Technology program is a NATEF/ASE Master certified training program and offers ABE-based certificate options. It provides students with up-to-date, technologically advanced training equipment and facilities through the continued support of industry manufacturers and local dealers. The program features close incorporation of non-technical education, combining mechanical, electronic, math, communication and problem-solving skills with hands-on maintenance. This tie between traditional shop-based and classroom education requires a close proximity between the shop and classroom, a functional need that the existing building has not been able to support.

Since its construction in 1970, space that was initially programmed for classroom has been converted to shop and shop support resulting in a lack of classroom space for the automotive programs. The existing Automotive Technology Building contains 34,120-GSF and has a 5,400-sf uncovered automotive courtyard for a total of 39,520-gsf. Renovation guidelines would allow a total project size of 51,374-gsf if the full 30% increase were taken. Owing to the configuration of the existing building, the renovation project only proposes a 24% increase.

The proposed program is weighted heavily to instructional space. After execution the renovated Automotive Technology will house the following program spaces:

<i>Type</i>	<i>Total</i>	<i>% ASF</i>
<b>Administration</b>	<b>1,055</b>	<b>3%</b>
Program Admin/reception	785	
Copy Room	135	
Conference	135	
<b>Faculty</b>	<b>880</b>	<b>2%</b>
Faculty Office	880	
<b>Classrooms/ Labs</b>	<b>29,307</b>	<b>85%</b>
General Automotive Shop	11,450	
Special Automotive Shop	8,810	
Diagnostics Shop	2,137	
Shop-Classroom	3,750	



General Classroom	1,800	
Computer Lab	640	
Small-group Classrooms	720	
<b>Student Services</b>	<b>3,365</b>	10%
Student Tool Crib	1,890	
Display Student Lounge	1,475	
<b>Subtotal</b>	<b>34,607</b>	
Support	3,461	
Circulation	4,145	
Walls & Structure	3,377	
<b>TOTAL</b>	<b>45,590</b>	

### 2.3 Impact on Student FTE's

It is anticipated that the additional square feet in both shop and support space will facilitate vertical scheduling and will have the capacity for an additional **XX** student FTEs (**XX%** increase over existing **XXX**). This will assure that the project achieves the recommended instructional space of 120-sf /FTE for technical education.

## 3.0 PRIOR PLANNING

### 3.1 History

The Automotive Technology Building was constructed in 1970 as one of the original buildings on the South Seattle Community College campus. The original funding source was a state appropriation. There have been minimal renovations or work on this building other than enclosing a covered service yard between the adjacent Heavy-Duty Diesel Building and on-going maintenance.

The original funding source for the building was state appropriations.

### 3.2 Integration with Master Plan, Strategic Plan, Institutional Goals

#### Master Plan

South Seattle Community College recently completed an extensive multi-year Major Institutional Master Plan under the City of Seattle's Major Institution Master Plan Code. Adopted in 2007, the Master Plan envisions creating a primary north-south pedestrian walk from the north parking lot along the east face of the Automotive Technology Building. The proposed project is fully integrated to this plan by rerouting service traffic from north-south and creating a major pedestrian entrance to the building off of the east walkway, while permitting vehicle access from a service drive to the east.

#### Strategic Plan

South Seattle Community College is known as one of the premier institutions in the State for technical training and the Automotive Technology program is one of the outstanding programs of its type. The SSCC strategic plan calls for the close integration of basic education into the technical skills education and integrated ESL along the I-BEST and



VESL pedagogy. This project will facilitate integrated education while ensuring a quality educational and training environment that meets a proven student need for specialized automotive training, especially considering the emerging issues of sustainable transportation.

### **Institutional Goals**

South Seattle Community College has established a number of institutional goals in support of its strategic plan. The proposed renovation and addition to the Automotive Technology Building will directly support the following institutional goals:

- I. This project directly enhances the ability of SSCC to meet its goal to provide comprehensive instructional programs which include professional technical education that meet the diverse needs of students and its communities. It will provide industry-based and service learning opportunities for students.
- II. Providing classrooms directly adjacent to the shops, increasing vehicle bays for 18 to 24 and increasing support space for female students meets SSCC goal of providing responsive student services and programs which support the learning and success of South's diverse student population.
- IV. This project will expand SSCC's ability to meet their goal of expanding partnerships with business and industry particularly the independent automotive repair businesses in the South Seattle Community College neighborhood.

## **4.0 NEEDS ANALYSIS**

### **4.1 Facilities/Program**

The facility needed for Automotive Technology is a building that meets current standards for industrial education as well as code standards for accessibility, health, and safety.

#### **Insufficient Lab Space**

The number of bays and the inability to place a vehicle in each bay requires that four students are assigned to each vehicle, rather than two as the instructional model suggests. This leads to ineffective learning as hands-on shop time is not as individualized. Owing to the need to change the use of space originally designed as vehicle bays to support changed program needs, the current plan only permits simultaneous work on 18 vehicles. The proposed plan can accommodate up to 27 vehicles.

#### **Proximity of Classrooms and Labs**

The lack of suitable and sufficient shop space with direct adjacency to classroom and support space adversely affects the ability to operate quality industrial educational and training programs. The current plan provides only four 20-person classrooms and only two of these are directly adjacent to their shop spaces. The proposed plan includes eight classrooms, five of which are directly adjacent to the shops they serve. Additionally four of the classrooms can accommodate 30 students and would be suitable for use as general-purpose classrooms as scheduling permits.

#### **Poor Student Supervision in Shops**

The need for additional shop space was addressed by repurposing some specialty diagnostic bays into general automotive bays. As these bays are not adjacent to one another, classes are operating at bays that are not able to be visually supervised by the



instructor. This has led to inefficient lab time and potentially unsafe conditions. The proposed plan consolidates all vehicle bays in two primary shop areas providing maximum visual supervision of all shop activities.

#### **4.2 Project Drivers**

The project is driven by negative program impacts from the existing physical arrangement and condition of the Automotive Technology Building. Specific physical deficiencies include the following:

- *Insufficient Shop/Lab Space:* Due to the lack of appropriate classrooms and sufficient support spaces, valuable shop/lab space is used for these essential functions. Classrooms have been turned into shop and storage space and specialty bays have been repurposed to standard bays.
- *Inability to support technology in shops:* The old infrastructure does not permit access to data/computers at all shop bays.
- *Equipment Inadequate:* The vehicle lifts are at the end of their useful life and are not of the appropriate number (14 available while 28 are needed) or type.
- *Insufficient Faculty Offices:* Space originally designed for administrative and office use has been converted to classroom and tool storage. There is little or no space in the existing building for faculty offices, thus faculty use classroom space for offices. Space for private counseling and conferences is nonexistent.
- *Inadequate Toilet Facilities:* The toilet and shower facilities are undersized and do not provide equal services or access for female students.
- *Inadequate and Obsolete Mechanical Systems:* Mechanical systems are at the end of their useful lives, consume excessive energy, and require frequent maintenance. Infrared heaters in the shop/labs are unreliable and unit heaters in other shops are so noisy that they must be manually disabled during instruction hours. The dust collection system is so inadequate that heavy dust covers floors, equipment, and worktables, and the floor drains are frequently blocked by excessive particulates.
- *Inadequate Lighting:* In shop/labs the light fixtures are poorly located, resulting in insufficient and inconsistent illumination.
- *Inadequate Safety Devices:* There are no central power shut-offs for emergency use and only plug-in carbon monoxide sensors are available. These are prone to misuse by students, and compromise safety.
- *Poor Hazardous Materials Control:* Shop design does not accommodate new hazardous materials requirements or allow for a centralized collection area.
- *Obsolete Site Utilities:* The oil-water separators are non-coalescing type, are marginally effective and do not meet the need to educate students in sustainable automotive practices.
- *Poor Controls:* Various rooms in the building suffer from chronic erratic temperature control.
- *Insufficient Material Storage:* There is inadequate space for secure equipment, parts, and tool storage. Tools are stored in shop/lab bays in the absence of secure rooms, further compromising instructional space.



- Leaking Roof: The existing roofing system has reached the end of its useful life. The gutters have been leak-prone for years.
- Seismic Weakness: The basic design of the existing building creates weakness in transference of seismic loads to the foundation.
- Lack of Student Study Spaces: The only informal study areas are outdoors and inhospitable for much of the year. More commonly, students gather outside the entries to their shops, in conflict with vehicular traffic.
- Lack of Student Work Display: The existing building has no means of publicly displaying its students' work, inhibiting the college's community outreach, promotion, and educational efforts.
- General Wear and Tear: While well-maintained, the years of intensive use by industrial trades has caused building finishes to suffer considerable wear and tear.

### 4.3 Alternatives Considered

#### Move to Other On-Campus Facilities:

There are no other facilities available on the SSCC Campus capable of supporting the Automotive Technology program.

#### Relocate Off-Campus:

This option was rejected as there are no suitable site alternatives in close proximity to the college. Also, there are inefficiencies and greater cost in operating a remote site. Students' access to library and student services would be severely limited.

#### Do Nothing:

This option was rejected as the need to address the health, safety, and operational impacts to the program is considered critical. If the project does not proceed:

1. Safety of students and staff will continue to be compromised.
2. The educational goals and outcomes of the housed programs will be more and more difficult to meet.
3. It will be impossible to respond to increased demand and projected FTE growth on campus.
4. Staff efficiency due to space deficiencies will continue to be problematic.
5. The instructional environment will continue to be insufficient.
6. Operation and Maintenance costs will continue to increase.
7. The condition of the existing building will worsen.
8. Appropriate instructional technology will not be present.

## 5.0 ISSUES ANALYSIS

### 5.1 Utility Infrastructure Needs

The proposed building renovation and addition will require standard domestic and fire protection water, sanitary and storm sewers, electrical power, and gas, all of which are at the existing building and adequate for planned use.

### 5.2 Life of Facility

The proposed building will be of permanent construction meeting all current codes and standards. It will have a minimal service life expectation of over 30 years.



### **5.3 Sustainability**

The proposed project will meet all current codes including the Washington State Energy Code and will comply with SB-5509. The building will be designed in accordance with sustainable building practices and guidelines to achieve LEED Silver certification at a minimum of 36 points. Other sustainable features planned include the use of recycled and local materials, low-emission (VOC) materials, and certified wood/renewable products.

## **6.0 SITE FEASIBILITY**

### **6.1 Acquisition Needs**

The proposed site is within the boundaries of the college and will not require land acquisition.

### **6.2 Mitigation or Neighborhood Issues**

As the proposed site is remote from the adjacent residential neighborhoods and is in a building already used for this purpose, it is not anticipated to generate any major mitigation requirements.

### **6.3 Parking expansion**

The proposed project will have minimal parking impact.

### **6.2 Permit Issues**

The proposed building is appropriately zoned for this use, is included in the approved Major Institution Master Plan. There are no anticipated difficulties in obtaining the necessary Land Use or Building Permits.

### **6.4 Environmental Issues and Site Mitigation**

The existing building has some asbestos but it is not considered significant or impacting to the planned renovation. There are no anticipated site mitigation impacts to the planned remodel/addition.

## **7.0 SPACE UTILIZATION**

### **7.1 Capacity and Utilization**

The current capacity and enrollment in Automotive Technology is **XXX** FTE. The current building has little ability to increase instructional area through renovation alone due to inflexibility of spaces, poor infrastructure, and lack of support space which is critical to vocational instruction. The existence of a central service court provides an opportunity to expand the building without impacting adjacent buildings or campus infrastructure.

It is anticipated that the combination of the addition of instructional space by infilling the service court and the reconfiguration of the shops will increase student capacity by up to **XX** additional FTEs.



**7.2 Program Mix, Age, and Condition**

The proposed project is intended to correct current deficiencies in configuration and condition of the existing buildings. It will also produce additional program space and promote significant operational efficiencies.

**7.3 Status of Vacated/New Space**

When completed, this project will create no vacated space.

**7.4 Need & Availability of Surge Space**

The 2-wing configuration of the existing building will allow a sequence of work permitting half of the building to remain occupied during construction. The functions that will be displaced can be accommodated in the Technology Center Building through extended scheduling. With this sequence, no separate surge space will be necessary for this project.

**8 CAPITAL COST DEVELOPMENT**

**8.1 Overall Project Costs**

It is estimated that the project will have an overall project cost of \$17,604,000 (escalated to 10/2011)

**8.2 Reasonableness of costs (comparables)**

As indicated on the attached detail estimate the MACC/GSF cost for the addition in 2007 is \$276/gsf and for the renovation is \$159/gsf. This compares favorable with the area costs for the SSCC Duwamish shops which bid in 2006 at \$280/sf and with recent renovation costs that bid in the \$145-\$180/sf range.

**8.3 Anticipated Funding**

It is anticipated that the project will be funded by state appropriation.

**9.0 OPERATING BUDGET IMPACTS**

**9.1** The proposed project will impact operational costs due to the increased building area. There are anticipated to be:

<i>Type</i>	<i>Rate</i>	<i>Annual Cost</i>
Utilities	\$3.10/sf/yr	\$141,329
Capital & Grounds Maintenance	\$1.90/sf/yr	\$86,621
Technology	\$1.05/sf/yr	\$47,870
Custodial	\$3.00/sf/yr	\$136,770
<b>Total Annual Operating Costs:</b>	<b>\$9.05/sf/yr</b>	<b>\$412,590</b>

The above includes labor costs for the following anticipated FTE:

<i>Type</i>	<i>FTE</i>
Janitorial	1.25
Security and Administration	.25
Capital Maintenance	.20
<u>I.T./Specialty Equipment</u>	<u>.05</u>
<b>Total Estimated FTE Required:</b>	<b>1.75</b>



## 10.0 SCHEDULE

### 10.1 Proposed Project Schedule

<u>Activity</u>	<u>Milestone</u>	<u>Date</u>	<u>Duration</u>
Predesign	Start:	January 2008	6 Months
	Complete	July 2008	
Schematic Design	Start:	July 2009	4 Months
	Complete	October 2009	
Design Development	Start:	November 2009	4 Months
	Complete	February 2009	
Contract Documents	Start:	March 2010	6 Months
	Complete	July 2010	
Permitting	Start:	August 2010	8 Months
	Complete	March 2011	
Bidding	Start:	March 2011	3 Months
	Complete	May 2011	
Construction	Start:	July 2011	20 Months
	50% complete:	July 2012	
	Complete:	March 2013	

## 11.0 IMPLEMENTATION

### 11.1 Timing of Request

This request is planned for funding over two biennia with design funding in the 09-11 cycle and construction funding in the 11-13 cycle.

### 11.2 College Priority

The Renovation of Automotive Technology is the #2 project priority after the Replacement of the Campus Court Building.

### 11.3 Anticipated Method of Construction

It is anticipated that this project will be delivered under the traditional Design-Bid-Build method. Construction will be sequenced with work starting in the north bays and infill which will be complete by July 2012 and occupied prior to work on the south wing which will be completed by March 2013.

C-2

C-100 Summary

C-100 Form

Estimate Detail

## **APPENDIX A - COSTS**



**2009-2011 Renovation Project Request**

**STATE OF WASHINGTON  
CAPITAL PROJECT REQUEST**

**FORM  
C-2**

AGENCY NAME (1) <b>STATE BOARD FOR COMMUNITY AND TECHNICAL COLLEGES</b>					AGENCY CODE (2) 699	
PROJECT TITLE (3) Automotive Technology Building Renovation				TYPE (4) 2	PROJECT NUMBER (5)	
PLAN PRIORITY (6) 2	OFM PRIORITY (6) 1	PREVIOUSLY REQ?(8) No	COUNTY (13) King	CITY (14) Seattle	LEGISLATIVE DIST. (12) 34 & 37	
WAS PROJECT INCLUDED IN PRIOR 10 YEAR PLAN? (9) No			IF YES, WHEN? (10)	PREV. PROJ. # (11)		

PROJECT DESCRIPTION (15)		SEVERITY SCORE		402	
a. Problem/Justification/Why This Project Is Necessary					
<p>The existing Automotive Technology Building negatively impacts the effectiveness of the current program and is incapable of supporting the envisioned future program development due to an inadequate instructional area, inherently poor relationships between shops/classrooms, and the inflexibility of the basic design. Without significant renovation and select additions, the existing Automotive Technology Building will be unable to support the program's evolved instructional methodologies. Staff efficiency due to space deficiencies will continue to be problematic and operation and maintenance costs will continue to increase. The condition of the existing building will worsen. Appropriate and needed instructional technology will not be present.</p>					
b. Proposed Solution/Benefit to College				COMPLIES W/GMA? (16)	
				Yes	
<p><b>Effectiveness:</b> The proposed plan can accommodate up to 27 vehicles instead of 18 current  <b>Access:</b> The proposed plan includes 8 classrooms, twice the number of existing. They are also directly adjacent to the shops  <b>Safety:</b> The proposed plan provides maximum visual supervision of all shop activities. The new HVAC systems will provide code compliant CO2 monitoring and exhaust evacuation. The project will also correct seismic deficiencies.  <b>Less Costs:</b> The proposed plan upgrades the existing building to current energy codes and clears back-log maintenance providing 30+year service.  <b>Technology:</b> The proposed plan will provide access to technology at each bay.  <b>Gender Equality:</b> The proposed plan will provide adequate and equal facilities for female students.  <b>Faculty:</b> The proposed plan provides 8 faculty offices separate from the shops.  <b>Environmental:</b> The proposed plan enables the college to institute the sustainable practices</p>					
RELATED COSTS (17) Operating budget costs/savings required for this project, including staff and cost of maintenance - MANDATORY			1.8 FTE; \$412,590 / \$ per fiscal year		

PROJECT FUNDING (18)							
FUND CODE		ESTIMATED TOTAL COST		EXPENDITURES		2009-11 FISCAL PERIOD	
57		\$17,604,000		Prior Biennium	Current Biennium	Reappropriation	New Appropriation
57				\$0	\$0	\$0	\$1,800,000
FUND CODE				FUTURE FISCAL PERIODS			
57				2011-13	2013-15	2015-17	2017-19
57				\$15,804,000	\$0	\$0	\$0

PROJECT STATISTICS (19)												
PROJECT LIFE		Net Project Size (sq. ft.)			Gross Project Size (sq. ft.)				Cost Per Gross Square Foot			
40-years	New	8,602	Remodel	29,002	New	11,470	Remodel	34,120	New	\$338.19	Remodel	\$183.65
Project Phases				BASE COST (7/01)		PROJECT SCHEDULE (20)		ADJUSTED CAPITAL COST				
ACQUISITION COSTS				\$0		START		COMPLETE		%	COST	
DESIGN CONSULTANT SERVICES				1,649,093		07/01/09		07/01/10		1.2813	\$2,113,000	
CONSTRUCTION CONTRACT COSTS:												
MACC		\$8,792,080								1.1025	\$10,145,000	
20.00 % CONTINGENCY		\$1,758,416								1.1025	\$2,030,000	
8.90 % TAX		\$938,994								1.1025	\$1,084,000	
CONSTRUCTION SUBTOTAL				11,489,490						1.1540	\$13,259,000	
EQUIPMENT (include tax)				1,330,255						1.1539	\$1,535,000	
ARTWORK				43,960						1.0009	\$44,000	
OTHER COSTS				448,501						1.1215	\$503,000	
CONTRACT ADMINISTRATION				150,000						1.0000	\$150,000	
TOTAL COST				\$15,111,299						1.1650	\$17,604,000	

**STATE OF WASHINGTON**  
**AGENCY/INSTITUTION PROJECT COST SUMMARY**

<b>Agency</b>	State Board for Community & Technical Colleges
<b>Project Name</b>	South Seattle CC Auto Technology Renovation/Addition
<b>Project Number</b>	

**Contact Information**

Analysis Date	12/5/2007
Analysis By	Schrieber Starling & Lane/Robinson Co
Contact Phone Number	206-682-8300 206-441-8872

<b>Statistics</b>	<b>Primary</b>	<b>Secondary</b>	<b>Total</b>
Gross Square Feet	34,120	11,470	45,590
Net Square Feet	22,758	8,846	31,604
Efficiency	67%	77%	69%
Escalated MACC Cost per Sq.Ft.	184	338	223
Building Type	Vocational Schools	Vocational Schools	
Is project a remodel?	Yes	No	
A/E Fee Class	B	B	
A/E Fee Percentage	10.51%	9.01%	

<b>Schedule</b>	<b>Start Date</b>	<b>End Date</b>
Predesign (mm-yyyy)	Jan-2008	Jul-2008
Design (mm-yyyy)	Jul-2009	Jul-2011
Construction (mm-yyyy)	Jul-2011	Mar-2013
Construction Duration (months)		20

**Cost Summary**

<b>Project Phase</b>	<b>Escalated Cost</b>
<b>Project Total</b>	\$17,604,000
<b>Consultant Services</b>	\$2,113,000
Pre-Schematic Design Services	\$94,000
A/E Basic Design Services	\$654,000
A/E Extra Services/Reimbursables	\$649,000
Other Services	\$480,000
Design Services Contingency	\$236,000
<b>Construction</b>	\$13,259,000
MACC - Primary	\$6,266,000
MACC - Secondary	\$3,879,000
GC/CM Risk Contingency	\$0
GC/CM or Design Build	\$0
Contingencies	\$2,030,000
Sales Tax	\$1,084,000
<b>Other</b>	\$2,232,000
Acquisition	\$0
Equipment	\$1,410,000
Equipment Tax	\$125,000
Artwork	\$44,000
Agency Project Administration	\$150,000
Other	\$503,000

**Other Details**

Number of C100s Included in Summary	1
Alternative Public Works Project	No
State Construction Inflation Rate	3.50%
Base Month	Mar-2008
Project Administration by	Agency and GA
Project Admin Impact to GA that is NOT included in Project Total	\$487,350

STATE OF WASHINGTON  
**AGENCY/INSTITUTION PROJECT COST ESTIMATE**

FORM  
**C-100**  
Version 2.62  
August 1, 2007

<b>AGENCY:</b>	State Board of Community and Technical Colleges	<b>Analysis Date:</b>	12/5/2007
<b>PROJECT NAME:</b>	South Seattle CC Auto Technology Renovation/Addition	<b>Analysis By:</b>	Schrieber Starling & Lane/Robinson Co
<b>PROJECT NUMBER:</b>		<b>Contact Phone #:</b>	206-682-8300 206-441-8872
<b>LOCATION:</b>	Seattle, Washington		

STATISTICS:	Primary	Secondary
Gross Square Feet	34,120	11,470
Net Square Feet	22,758	8,846
Efficiency	67%	77%
Estimated Cost per S.F.	184	338
Building Type:	Vocational Schools	Vocational Schools
Is project a remodel?	Yes	No
A/E Fee Class	B	B
A/E Fee Percentage:	10.51%	9.01%

Project Schedule	Start Date	End Date
1. Pre-design (mm-yyyy):	Jan-2008	Jul-2008
2. Design (mm-yyyy):	Jul-2009	Jul-2011
3. Construction (mm-yyyy):	Jul-2011	Mar-2013
5. Construction Duration (in Months):	20	
State Construction Inflation Rate:	3.50%	
Base Month:	Mar-2008	

Project Cost Summary	
Primary MACC (escalated):	\$6,266,000
Secondary MACC (escalated):	\$3,879,000
Current Project Total:	\$15,374,631
Escalated Project Total:	\$17,604,000

Contingency Rate:	12.00%
Management Reserve:	8.00%
Tax Rate:	8.90%
Art Requirement Applies:	Yes
Project Admin by GA:	Yes
Higher Ed. Institution:	Yes
Alternative Public Works Project:	No

Includes Formula Overrides:	No
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ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
<b>A. ACQUISITION COSTS</b>					
1 Purchase/Lease Cost					
2 Appraisal and Closing Costs					
3 Right-of-Way Costs					
4 Offsite Mitigation					
5					
INSERT <--Double-Click Here to Insert a Row					
<b>Total: Acquisition Costs</b>	<b>\$0</b>			1.0000	<b>\$0</b>
<b>B. CONSULTANT SERVICES</b>					
<b>1 Pre-Schematic Design Services</b>					
a. Programming/Site Analysis					
b. Environmental Analysis	\$45,000				
c. Pre-design Study					
d. Existing Building Investigation	\$45,000				
INSERT <--Double-Click Here to Insert a Row					
<b>SubTotal: Pre-Schematic Design Services</b>	<b>\$90,000</b>			1.0470	<b>\$94,000</b>
<b>2 Construction Documents</b>					
a. A/E Basic Design Services - Up to Bidding (69%)	\$394,001		\$394,001		
b. A/E Basic Design Services - Secondary (69%)	\$209,074		\$209,074		
<b>SubTotal: Construction Documents</b>	<b>\$603,075</b>			1.0836	<b>\$654,000</b>
<b>3 Extra Services</b>					
a. Civil Design (Above Basic Services)	\$25,000				
b. Geotechnical Investigation	\$75,000				
c. Commissioning	\$20,000				
d. Site Survey	\$8,000				
e. Testing	\$35,000				
f. Energy Conservation Report	\$9,000				
g. Voice/Data Consultant	\$15,000				
h. VE Participation & Implementation	\$12,000				
i. Constructability Review Participation	\$12,000				
j. Environmental Mitigation Services (EIS)	\$0				
k. Landscape Consultant	\$20,000				
l. Hazardous Materials Abatement Consultant	\$15,000				
m. Life Cycle Cost Analysis	\$10,000				
n. Reimbursables Including Reprographics	\$40,000				
o. Advertising	\$2,500				
p. Computer Modeling/Animation	\$10,000				
q. Interior Design	\$25,000				
r. Acoustic Design	\$20,000				
s. Security Consultant	\$10,000				
t. Audio/Visual Consultant	\$20,000				
u. LEED Reporting and Monitoring	\$65,000				
v. Cost & Scheduling Independent	\$30,000				
w. LEED Design	\$75,000				

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
x. Lighting Consultant	\$10,000				
y. Automotive Equipment Consultant	\$35,000				
z.					
aa.					
ab.					
INSERT <--Double-Click Here to Insert a Row					
<b>SubTotal: Extra Services</b>	<b>\$598,500</b>			1.0836	<b>\$649,000</b>
<b>4 Other Services</b>					
a. Bid/Construction/Closeout - 31% of basic services	\$177,015		\$177,015		
b. Bid/Construction/Closeout - Secondary	\$93,932		\$93,932		
c. HVAC Balancing					
d. Commissioning and Training	\$75,000				
e. Value Engineering Study	\$35,000				
f. Constructibility Review	\$35,000				
INSERT <--Double-Click Here to Insert a Row					
<b>SubTotal: Other Services</b>	<b>\$415,947</b>			1.1542	<b>\$480,000</b>
<b>5 Design Services Contingency</b>	12.00%		\$204,903		
a.					
INSERT <--Double-Click Here to Insert a Row					
<b>SubTotal: Design Services Contingency</b>	<b>\$204,903</b>			1.1542	<b>\$236,000</b>
<b>Total: Consultant Services</b>	<b>\$1,912,425</b>				<b>\$2,113,000</b>
<b>C. CONSTRUCTION CONTRACTS</b>					
<b>1 Site Work</b>					
a. G10 - Site Preparation	\$6,500				
b. G20 - Site Improvements	\$67,500				
c. G30 - Site Mechanical Utilities					
d. G40 - Site Electrical Utilities					
e. G60 - Other Site Construction					
f.					
g.					
INSERT <--Double-Click Here to Insert a Row					
<b>SubTotal: Site Work</b>	<b>\$74,000</b>			1.1215	<b>\$83,000</b>
<b>2 Related Project Costs</b>					
a. Off site improvements					
b. City Utilities Relocation					
c. Parking Mitigation					
d. Stormwater Retention/Detention					
e. Wetland Mitigation					
f.					
INSERT <--Double-Click Here to Insert a Row					
<b>SubTotal: Related Project Costs</b>	<b>\$0</b>			1.1215	<b>\$0</b>
<b>3A Facility Construction - Primary</b>					
a. A10 - Foundations	\$23,886				
b. A20 - Basement Construction	\$0				
c. B10 - Superstructure	\$85,300				
d. B20 - Exterior Closure	\$38,400				
e. B30 - Roofing	\$426,500				
f. C10 - Interior Construction	\$390,423				
g. C20 - Stairs	\$0				
h. C30 - Interior Finishes	\$514,333				
i. D10 - Conveying	\$0				
j. D20 - Plumbing Systems	\$119,420				
k. D30 - HVAC Systems	\$1,273,600				
l. D40 - Fire Protection Systems	\$119,420				
m. D50 - Electrical Systems	\$801,820				
n. F10 - Special Construction	\$0				
o. F20 - Selective Demolition	\$209,336				
p. General Conditions	\$495,000				
q. Design Contingency	\$457,144				
r. General Contractor OH&P	\$402,286				
s.					
INSERT <--Double-Click Here to Insert a Row					
<b>SubTotal: Facility Construction - Primary</b>	<b>\$5,356,867</b>			1.1542	<b>\$6,183,000</b>
<b>Maximum Allowable Construction Cost (MACC) - Primary</b>	<b>\$5,430,867</b>				<b>\$6,266,000</b>
<b>3B Facility Construction -Secondary (By Building System)</b>					
a. A10 - Foundations	\$134,568				
b. A20 - Basement Construction	\$0				
c. B10 - Superstructure	\$275,280				
d. B20 - Exterior Closure	\$310,993				
e. B30 - Roofing	\$95,988				
f. C10 - Interior Construction	\$223,608				
g. C20 - Stairs	\$20,000				
h. C30 - Interior Finishes	\$169,183				
i. D10 - Conveying	\$60,000				
j. D20 - Plumbing Systems	\$108,965				

ITEM		BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST
k. D30 - HVAC Systems		\$401,450				
l. D40 - Fire Protection Systems		\$40,145				
m. D50 - Electrical Systems		\$372,775				
n.. F10 - Special Construction		\$0				
o.. F20 - Selective Demolition		\$0				
p. General Conditions		\$385,000				
q. Bldg Related Sitework		\$71,229				
r. Design Contingency		\$457,144				
s. General Contractor OH&P		\$234,888				
t.						
INSERT <--Double-Click Here to Insert a Row						
<b>SubTotal: Facility Construction -Secondary (By Building System)</b>		<b>\$3,361,213</b>			1.1542	<b>\$3,879,000</b>
<b>Maximum Allowable Construction Cost (MACC) - Secondary</b>		<b>\$3,361,213</b>				<b>\$3,879,000</b>
<b>4 GC/CM Risk Contingency - NOT APPLICABLE</b>						
<b>5 GC/CM or Design Build Costs - NOT APPLICABLE</b>						
<b>6 Construction Contingencies</b>						
a. Management Reserve	8.00%	\$703,366		\$703,366		
b. Allowance for Change Orders	12.00%	\$1,055,050		\$1,055,050		
c.						
INSERT <--Double-Click Here to Insert a Row						
<b>SubTotal: Construction Contingencies</b>		<b>\$1,758,416</b>			1.1542	<b>\$2,030,000</b>
<b>7 Sales Tax</b>	8.90%	\$938,994		\$938,994		
a.						
INSERT <--Double-Click Here to Insert a Row						
<b>SubTotal: Sales Tax</b>		<b>\$938,994</b>			1.1542	<b>\$1,084,000</b>
<b>Total: Construction Contracts</b>		<b>\$11,489,490</b>				<b>\$13,259,000</b>
<b>D. EQUIPMENT</b>						
1 E10 - Equipment		\$236,025				
2 E20 - Furnishings		\$260,513				
3 F10 - Special Construction		\$0				
4 A/V Systems		\$105,000				
5 Telecom/Data Cabling/Equipment		\$120,000				
6 Automotive Equipment		\$500,000				
INSERT <--Double-Click Here to Insert a Row						
<b>SubTotal: Equipment</b>		<b>\$1,221,538</b>			1.1542	<b>\$1,410,000</b>
<b>99 Sales Tax</b>	8.90%	\$108,717		\$108,717		
100						
INSERT <--Double-Click Here to Insert a Row						
<b>SubTotal: Sales Tax</b>		<b>\$108,717</b>			1.1542	<b>\$125,000</b>
<b>Total: Equipment</b>		<b>\$1,330,255</b>				<b>\$1,535,000</b>
<b>E. ARTWORK</b>						
1 Project Artwork		\$27,154		\$27,154		
2 Higher Education Artwork		\$16,806		\$16,806		
3						
INSERT <--Double-Click Here to Insert a Row						
<b>Total: Artwork</b>		<b>\$43,960</b>			1.0000	<b>\$44,000</b>
<b>F. OTHER COSTS</b>						
1 Mitigation Costs						
2 Hazardous Material Remediation/Removal		\$115,001				
3 Permit Fee & Plan Check		\$80,000				
4 LEED Registration/Certification		\$3,500				
5 Market Condition Adjustment		\$250,000				
6						
INSERT <--Double-Click Here to Insert a Row						
<b>Total: Other Costs</b>		<b>\$448,501</b>			1.1215	<b>\$503,000</b>
<b>G. PROJECT MANAGEMENT</b>						
1 Agency Project Management		\$0		\$0		
2 SSCC Management		\$150,000				
INSERT <--Double-Click Here to Insert a Row						
<b>Total: Project Management</b>		<b>\$150,000</b>			1.0000	<b>\$150,000</b>
<b>GRAND TOTAL</b>		<b>\$15,374,631</b>				<b>\$17,604,000</b>
<b>NOTES</b>						

ITEM	BASE MONTH AMOUNT	FORMULA OVERRIDE	STANDARD FORMULA	ESCALATION FACTOR	ESCALATED COST



# ESTIMATE SUMMARY SHEET

PROJECT : SSCC AUTO TECH RENOVATION  
 LOCATION : SOUTH SEATTLE COMMUNITY COLLEGE  
 BLDG SF : 34,120  
 ESTIMATE : 2007191  
 EST TYPE : PROJECT FUNDING REQUEST

DIV #	DESCRIPTION	TOTAL	\$/SF
A1010	STANDARD FOUNDATIONS	23,886	0.70
B1010	SUPERSTRUCTURE	85,300	2.50
B2010	EXTERIOR CLOSURE	38,400	1.13
B3010	ROOFING/FLASHING	426,500	12.50
C1010	INTERIOR CONSTRUCTION	390,423	11.44
C3010	INT. FINISHES	514,333	15.07
D2010	PLUMBING SYSTEMS	119,420	3.50
D3010	HVAC SYSTEMS	1,273,600	37.33
D4010	FIRE PROTECTION SYSTEMS	119,420	3.50
D5090	ELECTRICAL SYSTEMS	801,820	23.50
F1010	SPECIAL CONSTRUCTION	0	0.00
F2010	SELECTIVE DEMOLITION	209,336	6.14
G1010	SITE PREPARATION	6,500	0.19
G2010	SITE IMPROVEMENTS	67,500	1.98
Z1010	GENERAL CONDITIONS	495,000	14.51
<b>ESTIMATE SUBTOTAL</b>		<b>4,571,437</b>	
	DESIGN CONTINGENCY @ 10.00%	457,144	
	<b>SUBTOTAL</b>	<b>5,028,581</b>	
	CONTRACTORS O&P @ 8.00%	402,286	
	<b>SUBTOTAL</b>	<b>5,430,867</b>	
	ESCALATION TO 10/08 (REFER TO C-100 FORM)	0	
	<b>SUBTOTAL</b>	<b>5,430,867</b>	
	OTHER @ 0.00%	0	
	<b>TOTAL</b>	<b><u>5,430,867</u></b>	<b>159.17</b>

**EXCLUSIONS:**

STATE SALES TAX  
 TESTING AND INSPECTIONS  
 CONSTRUCTION CONTINGENCY  
 ARCHITECT/ENGINEERING FEES  
 PERMITS  
 ASBESTOS REMOVAL  
 TOXIC SOILS/MATERIALS REMOVAL

FURNISHINGS & EQUIPMENT NOT LISTED  
 OFF-SITE CONSTRUCTION

**DETAILED  
ESTIMATE  
BREAKDOWN**

PROJECT : SSCC AUTO TECH RENOVATION  
 LOCATION: SOUTH SEATTLE COMMUNITY COLLEGE  
 BLDG SF : 34,120  
 ESTIMATE: 2007191  
 EST TYPE: PROJECT FUNDING REQUEST

UNIT CODE	DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
<b>A1010</b>	<b>STANDARD FOUNDATIONS</b>				
3050	CUT-PATCH SLAB ON GRADE (15%)	5,308	SF	4.5	23,886
<b>A1010</b>	<b>STANDARD FOUNDATIONS</b>		<b>DIVISION TOTAL</b>		<b><u>23,886</u></b>
<b>B1010</b>	<b>SUPERSTRUCTURE</b>				
5400	STRUCTURAL/SEISMIC UPGRADES	34,120	SFA	2.5	85,300
<b>B1010</b>	<b>SUPERSTRUCTURE</b>		<b>DIVISION TOTAL</b>		<b><u>85,300</u></b>
<b>B2010</b>	<b>EXTERIOR CLOSURE</b>				
4200	EXTERIOR WALL INFILL	1,280	SFA	30	38,400
<b>B2010</b>	<b>EXTERIOR CLOSURE</b>		<b>DIVISION TOTAL</b>		<b><u>38,400</u></b>
<b>B3010</b>	<b>ROOFING/FLASHING</b>				
7210	MEMBRANE ROOF/INSUL/SHEET METAL	34,120	SFA	12.5	426,500
<b>B3010</b>	<b>ROOFING/FLASHING</b>		<b>DIVISION TOTAL</b>		<b><u>426,500</u></b>
<b>C1010</b>	<b>INTERIOR CONSTRUCTION</b>				
9250	INT WALLS/DOORS @ MAJOR RENOVATON	24,115	SFA	13	301,438
8500	GLAZED OVERHEAD DOORS	5	EA	5400	27,000
9250	INT WALLS/DOORS @ MINOR RENOVATION	11,270	SFA	5.5	61,985
<b>C1010</b>	<b>INTERIOR CONSTRUCTION</b>		<b>DIVISION TOTAL</b>		<b><u>390,423</u></b>
<b>C3010</b>	<b>INTERIOR FINISHES</b>				
9000	INTERIOR FINISHES @ MAJOR MOD	24,115	SFA	8.5	204,978
9000	INTERIOR FINISHES @ MINOR MOD	11,270	SFA	5.5	61,985
10000	MISC SPECIALTIES	34,120	SFA	3.5	119,420
12000	FIXED CASEWORK/WORKCOUNTERS	34,120	SFA	2.5	85,300
11550	MISC. EQUIPMENT/APPLIANCES	34,120	SFA	1.25	42,650
<b>C3010</b>	<b>INTERIOR FINISHES</b>		<b>DIVISION TOTAL</b>		<b><u>514,333</u></b>
<b>D2010</b>	<b>PLUMBING SYSTEMS</b>				
15000	PLUMBING SYSTEM @ MOD	34,120	SFA	3.5	119,420
<b>D2010</b>	<b>PLUMBING SYSTEMS</b>		<b>DIVISION TOTAL</b>		<b><u>119,420</u></b>

**DETAILED  
ESTIMATE  
BREAKDOWN**

UNIT CODE	DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
<b>D3010</b>	<b>HVAC SYSTEM</b>				
15000	HVAC SYSTEM @ MAJOR MOD	34,120	SFA	30	1,023,600
15000	VEHICLE EXHAUST ALLOWANCE	1	LS	250000	250,000
<b>D3010</b>	<b>HVAC SYSTEM</b>		<b>DIVISION TOTAL</b>		<b><u>1,273,600</u></b>
<b>D4010</b>	<b>FIRE PROTECTION SYSTEM</b>				
15000	FIRE PROTECTION SYSTEM	34,120	SFA	3.5	119,420
<b>D4010</b>	<b>FIRE PROTECTION SYSTEM</b>		<b>DIVISION TOTAL</b>		<b><u>119,420</u></b>
<b>D5010</b>	<b>ELECTRICAL SYSTEMS</b>				
16000	ELECTRICAL @ MAJOR MOD	34,120	SFA	23.5	801,820
<b>D5010</b>	<b>ELECTRICAL SYSTEMS</b>		<b>DIVISION TOTAL</b>		<b><u>801,820</u></b>
<b>F1010</b>	<b>SPECIAL CONSTRUCTION</b>				
11000	WIRE MESH STORAGE UNITS	0	EA	18000	0
11000	AUTO LIFTS	0	EA	25000	0
<b>F1010</b>	<b>SPECIAL CONSTRUCTION</b>		<b>DIVISION TOTAL</b>		<b><u>0</u></b>
<b>F2010</b>	<b>SELECTIVE DEMOLITION</b>				
2000	SELECTIVE DEMOLITION @ MAJOR MOD	24,115	SFA	5.75	138,661
2000	SELECTIVE DEMOLITON @ MINOR MOD	11,270	SFA	2.5	28,175
2000	DEMO CANOPY	5,000	SF	4.5	22,500
2000	DEMO CONCRETE WALKS	5,000	SF	2.5	12,500
2000	SAWCUTTING & CORING	1	LS	7500	7,500
<b>F2010</b>	<b>SELECTIVE DEMOLITION</b>		<b>DIVISION TOTAL</b>		<b><u>209,336</u></b>
<b>G1010</b>	<b>SITE PREPARATION</b>				
2200	SITE PREPARATION	1	LS	5000	5,000
2200	MISC SITEWORK/CONTINGENCY	1	LS	1500	1,500
<b>G1010</b>	<b>SITE PREPARATION</b>		<b>DIVISION TOTAL</b>		<b><u>6,500</u></b>
<b>G2010</b>	<b>SITE IMPROVEMENTS</b>				
2500	PAVING PATCH/RESTORATION	1	LS	15000	15,000
2600	CONCRETE WALKS	5,000	SFA	5.5	27,500
2900	LANDSCAPING/IRRIGATION-ALLOWANCE	1	LS	20000	20,000
2900	MISC. SITEWORK/CONTINGENCY	1	LS	5000	5,000
<b>G2010</b>	<b>SITE IMPROVEMENTS</b>		<b>DIVISION TOTAL</b>		<b><u>67,500</u></b>
<b>Z1010</b>	<b>GENERAL CONDITIONS</b>				
1000	BLDG FLOOR AREA	34,120	SF	.....	0
1000	GENERAL CONDITIONS	9	MTH	55000	495,000
<b>Z1010</b>	<b>GENERAL CONDITIONS</b>		<b>DIVISION TOTAL</b>		<b><u>495,000</u></b>





# ESTIMATE SUMMARY SHEET

PROJECT : SSCC AUTO TECH ADDITION/INFILL  
 LOCATION : SOUTH SEATTLE COMMUNITY COLLEGE  
 BLDG SF : 11,470  
 ESTIMATE : 2007191  
 EST TYPE : PROJECT FUNDING REQUEST

DIV #	DESCRIPTION	TOTAL	\$/SF
A1010	STANDARD FOUNDATIONS	134,568	11.73
B1010	SUPERSTRUCTURE	275,280	24.00
B2010	EXTERIOR CLOSURE	310,993	27.11
B3010	ROOFING/FLASHING	95,988	8.37
C1010	INTERIOR CONSTRUCTION	223,608	19.49
C2010	STAIR CONSTRUCTION	20,000	1.74
C3010	INT. FINISHES	169,183	14.75
D1010	CONVEYING SYSTEM	60,000	5.23
D2010	PLUMBING SYSTEMS	108,965	9.50
D3010	HVAC SYSTEMS	401,450	35.00
D4010	FIRE PROTECTION SYSTEMS	40,145	3.50
D5090	ELECTRICAL SYSTEMS	372,775	32.50
G1010	SITE PREPARATION	21,500	1.87
G2010	SITE IMPROVEMENTS	21,825	1.90
G3010	SITE MECHANICAL UTILITIES	27,904	2.43
G4010	SITE ELECTRICAL UTILITIES	0	0.00
Z1010	GENERAL CONDITIONS	385,000	33.57
<b>ESTIMATE SUBTOTAL</b>		<b>2,669,181</b>	
	DESIGN CONTINGENCY @ 10.00%	266,918	
	SUBTOTAL	2,936,099	
	CONTRACTORS O&P @ 8.00%	234,888	
	SUBTOTAL	3,170,987	
	ESCALATION TO 10/08 (REFER TO C-100 FORM)	0	
	SUBTOTAL	3,170,987	
	OTHER @ 0.00%	0	
	<b>TOTAL</b>	<b>3,170,987</b>	<b>276.46</b>

**EXCLUSIONS:**

STATE SALES TAX  
 TESTING AND INSPECTIONS  
 CONSTRUCTION CONTINGENCY  
 ARCHITECT/ENGINEERING FEES  
 PERMITS  
 ASBESTOS REMOVAL  
 TOXIC SOILS/MATERIALS REMOVAL

FURNISHINGS & EQUIPMENT NOT LISTED  
 OFF-SITE CONSTRUCTION

**DETAILED  
ESTIMATE  
BREAKDOWN**

PROJECT : SSSC AUTO TECH ADDITION/INFILL  
 LOCATION: SOUTH SEATTLE COMMUNITY COLLEGE  
 BLDG SF : 11,470  
 ESTIMATE: 2007191  
 EST TYPE: PROJECT FUNDING REQUEST

UNIT CODE	DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
<b>A1010</b>	<b>STANDARD FOUNDATIONS</b>				
3005	STANDARD FOUNDATIONS	5,735	SFA	12.5	71,688
3000	ELEVATOR PIT	1	LS	9500	9,500
3050	S.O.G. 4"-COMPLETE	5,735	SFA	8	45,880
3050	TIE-IN AT EXISTING SLAB	250	LF	30	7,500
<b>A1010</b>	<b>STANDARD FOUNDATIONS</b>		<b>DIVISION TOTAL</b>		<b>134,568</b>
<b>B1010</b>	<b>SUPERSTRUCTURE</b>				
6200	UPPER FLOOR STRUCTURE	5,735	SF	28	160,580
5400	NEW ADDITION ROOF STRUCTURE	5,735	SFA	20	114,700
<b>B1010</b>	<b>SUPERSTRUCTURE</b>		<b>DIVISION TOTAL</b>		<b>275,280</b>
<b>B2010</b>	<b>EXTERIOR CLOSURE</b>				
9250	NEW EXTERIOR WALLS	5,131	SF	37.5	192,413
8500	NEW WINDOWS/GLAZING	1,428	SF	60	85,680
8200	NEW SKYLIGHTS	3	EA	7500	22,500
8500	GLAZED OVERHEAD DOOR	1	EA	5400	5,400
8500	DOORS/FRAMES/HARDWARE	2	EA	2500	5,000
<b>B2010</b>	<b>EXTERIOR CLOSURE</b>		<b>DIVISION TOTAL</b>		<b>310,993</b>
<b>B3010</b>	<b>ROOFING/FLASHING</b>				
7210	MEMBRANE ROOF COMPLETE CANOPY	5,735	SFA	12.5	71,688
		405	SF	60	24,300
<b>B3010</b>	<b>ROOFING/FLASHING</b>		<b>DIVISION TOTAL</b>		<b>95,988</b>
<b>C1010</b>	<b>INTERIOR CONSTRUCTION</b>				
9250	INT PARTITIONS	14,175	SF	9.5	134,663
8200	INTERIOR DOORS/FRAME/HDWRE	32	EA	1050	33,600
8500	INTERIOR RELITES	16	EA	950	15,200
10000	MISC SPECIALTIES	11,470	SFA	3.5	40,145
<b>C1010</b>	<b>INTERIOR CONSTRUCTION</b>		<b>DIVISION TOTAL</b>		<b>223,608</b>
<b>C2010</b>	<b>STAIR CONSTRUCTION</b>				
9250	STAIRS W/RAILS	2	EA	10000	20,000
<b>C2010</b>	<b>STAIR CONSTRUCTION</b>		<b>DIVISION TOTAL</b>		<b>20,000</b>

**DETAILED  
ESTIMATE  
BREAKDOWN**

<b>UNIT CODE</b>	<b>DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNITS</b>	<b>UNIT COST</b>	<b>TOTAL</b>
<b>C3010</b>	<b>INTERIOR FINISHES</b>				
9000	INTERIOR FINISHES @ NEW	11,470	SFA	12.5	143,375
12000	FIXED CASEWORK	11,470	SFA	2	22,940
11550	MISC. EQUIPMENT/APPLIANCES	11,470	SFA	0.25	2,868
<b>C3010</b>	<b>INTERIOR FINISHES</b>		<b>DIVISION TOTAL</b>		<b>169,183</b>
<b>D1010</b>	<b>CONVEYING</b>				
14000	ELEVATOR - 2 STOP	1	LS	60000	60,000
<b>D1010</b>	<b>CONVEYING</b>		<b>DIVISION TOTAL</b>		<b>60,000</b>
<b>D2010</b>	<b>PLUMBING SYSTEMS</b>				
15000	PLUMBING SYSTEM @ ADDITION	11,470	SFA	9.5	108,965
<b>D2010</b>	<b>PLUMBING SYSTEMS</b>		<b>DIVISION TOTAL</b>		<b>108,965</b>
<b>D3010</b>	<b>HVAC SYSTEM</b>				
15000	HEAT/VENT SYSTEM @ NEW	11,470	SFA	35	401,450
<b>D3010</b>	<b>HVAC SYSTEM</b>		<b>DIVISION TOTAL</b>		<b>401,450</b>
<b>D4010</b>	<b>FIRE PROTECTION SYSTEM</b>				
15000	FIRE PROTECTION SYSTEM	11,470	SFA	3.5	40,145
<b>D4010</b>	<b>FIRE PROTECTION SYSTEM</b>		<b>DIVISION TOTAL</b>		<b>40,145</b>
<b>D5010</b>	<b>ELECTRICAL SYSTEMS</b>				
16000	ELECTRICAL @ NEW	11,470	SFA	32.5	372,775
<b>D5010</b>	<b>ELECTRICAL SYSTEMS</b>		<b>DIVISION TOTAL</b>		<b>372,775</b>
<b>G1010</b>	<b>SITE PREPARATION</b>				
2000	SITE DEMOLITION/CLEARING	8,000	SFA	1.75	14,000
2200	EARTHWORK/GRADING	1	LS	5000	5,000
2200	EROSION CONTROL	1	LS	2500	2,500
<b>G1010</b>	<b>SITE PREPARATION</b>		<b>DIVISION TOTAL</b>		<b>21,500</b>
<b>G2010</b>	<b>SITE IMPROVEMENTS</b>				
2500	PAVING PATCH/RESTORATION	1,265	SFA	5	6,325
2600	CONCRETE WALKS	1,000	SFA	5.5	5,500
2900	MISC SITE IMPROVEMENTS	1	LS	10000	10,000
<b>G2010</b>	<b>SITE IMPROVEMENTS</b>		<b>DIVISION TOTAL</b>		<b>21,825</b>
<b>G3010</b>	<b>SITE MECHANICAL UTILITIES</b>				
2200	STORM COLLECTION	5,735	SFA	2.25	12,904
2200	WATER QUALITY UPGRADE-NO DETENTION	1	LS	10000	10,000
2200	WATER SYSTEM	1	LS	3500	3,500
2200	SANITARY SYSTEM	1	LS	1500	1,500
<b>G3010</b>	<b>SITE MECHANICAL UTILITIES</b>		<b>DIVISION TOTAL</b>		<b>27,904</b>

**DETAILED  
ESTIMATE  
BREAKDOWN**

UNIT CODE	DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
G4010	SITE ELECTRICAL UTILITIES				
16000	SITE LIGHTING/ELECTRICAL	0	SFA	0.5	0
G3010	SITE ELECTRICAL UTILITIES		DIVISION TOTAL		<u>0</u>
Z1010	GENERAL CONDITIONS				
1000	BLDG FLOOR AREA	11,470	SF	.....	0
1000	GENERAL CONDITIONS (PRORATED)	7	MTH	55000	385,000
Z1010	GENERAL CONDITIONS		DIVISION TOTAL		<u>385,000</u>
<u>ESTIMATE SUBTOTAL</u>					<u>2,669,181</u>

Renovation Form

## **APPENDIX B - RENOVATION FORM**



**2009-2011 Renovation Project Request**



## RENOVATION

<b>College</b>	<u>South Seattle Community College</u>		
<b>Project title</b>	<u>Automotive Technology Building Renovation</u>		
<b>Project number</b>	<u></u>		
<b>ASF:</b>	<u>34,607</u>	<b>GSF:</b>	<u>45,590</u>
<b>Project location:</b>	<u>Main Campus, West Seattle</u>		

### **What is the problem? Why is project necessary?**

The existing Automotive Technology Building negatively impacts the effectiveness of the current program and is incapable of supporting the envisioned future program development due to an inadequate instructional area, inherently poor relationships between shops/classrooms, and the inflexibility of the basic design.

### **What happens if this project isn't funded?**

Without significant renovation and select additions, the existing Automotive Technology Building will be unable to support the program's evolved instructional methodologies. Staff efficiency due to space deficiencies will continue to be problematic and operation and maintenance costs will continue to increase. The condition of the existing building will worsen. Appropriate and needed instructional technology will not be present.

### **What benefit will this project provide the college?**

Effectiveness: The current plan only permits simultaneous work on 18 vehicles. The proposed plan can accommodate up to 27 vehicles.

Access and Proximity: The proposed plan includes eight classrooms, double the number of existing. Five classrooms will be directly adjacent to the shops they serve. Additionally four of the classrooms can accommodate 30 students and would be suitable for use as general-purpose classrooms as scheduling permits.

Safety: The proposed plan consolidates all vehicle bays in two primary shop areas providing maximum visual supervision of all shop activities. The new HVAC systems will provide code compliant CO2 monitoring and exhaust evacuation. The project will also correct seismic deficiencies.

Operations & Maintenance: The proposed plan will upgrade the existing building envelope meeting current energy codes and reducing energy costs. It will also clear the back-log of maintenance issues and provide 30+year service from the new systems.

Technology Access: The proposed plan will provide access to technology at each bay.

Gender Equality: The proposed plan will provide adequate and equal facilities for female students.

Faculty: There are no dedicated faculty spaces in the existing building. Administrative duties, student counseling and similar activities take place in the shops and classrooms. The proposed plan provides 8 faculty offices.

Environmental: The proposed plan will enable the college to institute the sustainable shop practices they currently teach but are unable to employ due to inflexibility of the existing building.

### **How will this project increase efficiency or utilization of space?**

The proposed concept plan maximizes the usefulness of existing shop/labs by reconfiguring the high-bay areas to create additional vehicle workstations. These will be tailored to unique instructional methodologies. The infill addition will provide ground floor industrial classrooms with direct adjacency to the vehicle shop/lab. This will facilitate integration of basic and technical education without the disruption caused by moving to a remote classroom. The north area of the existing building will be reconfigured to provide additional secure and general storage spaces and a centralized tool crib.



Existing Campus Plan

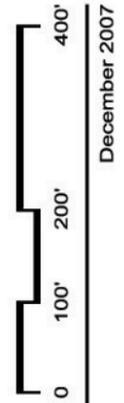
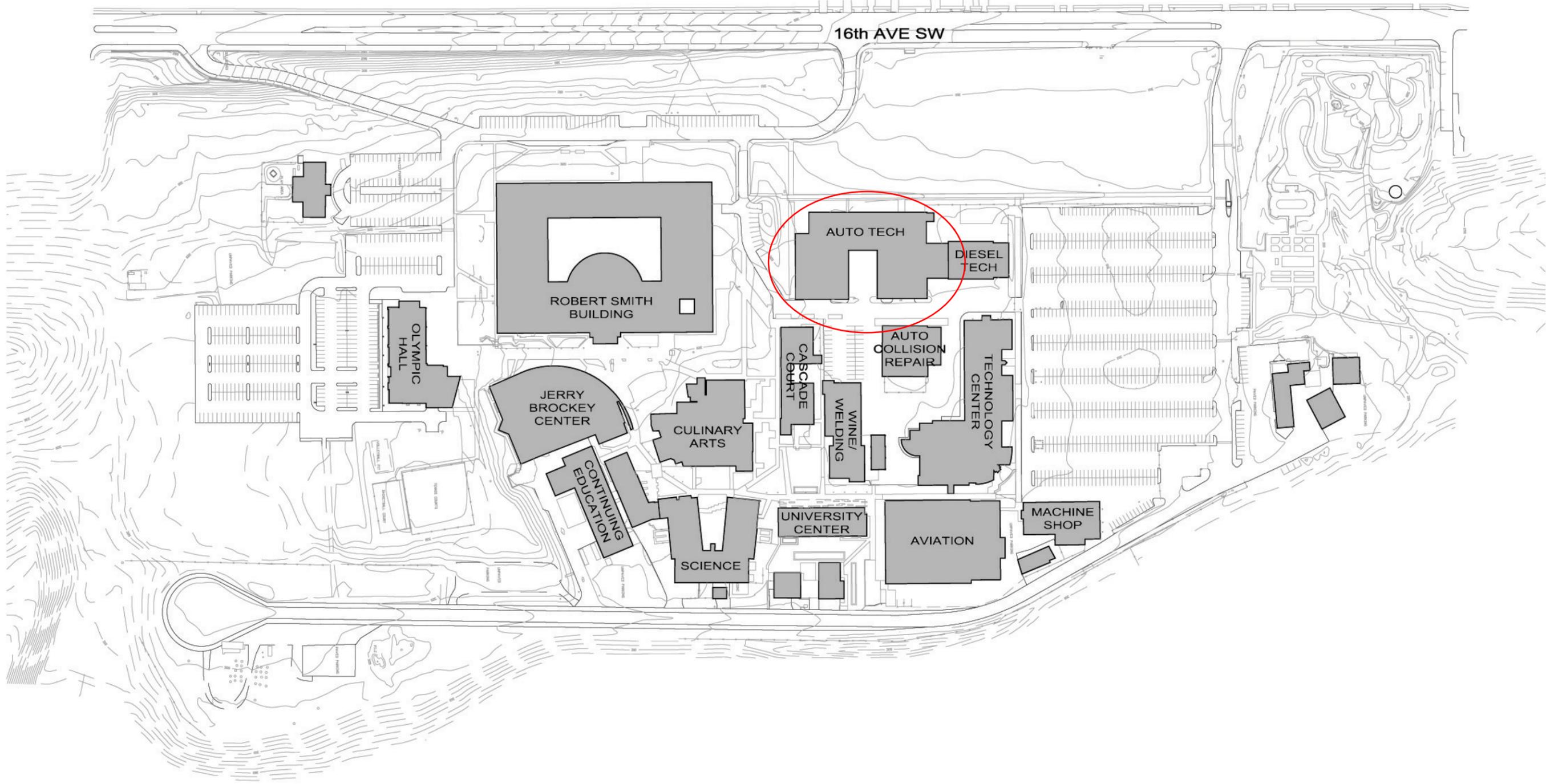
Proposed Site Plan

Proposed Floor Plans

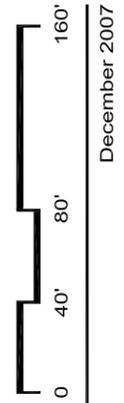
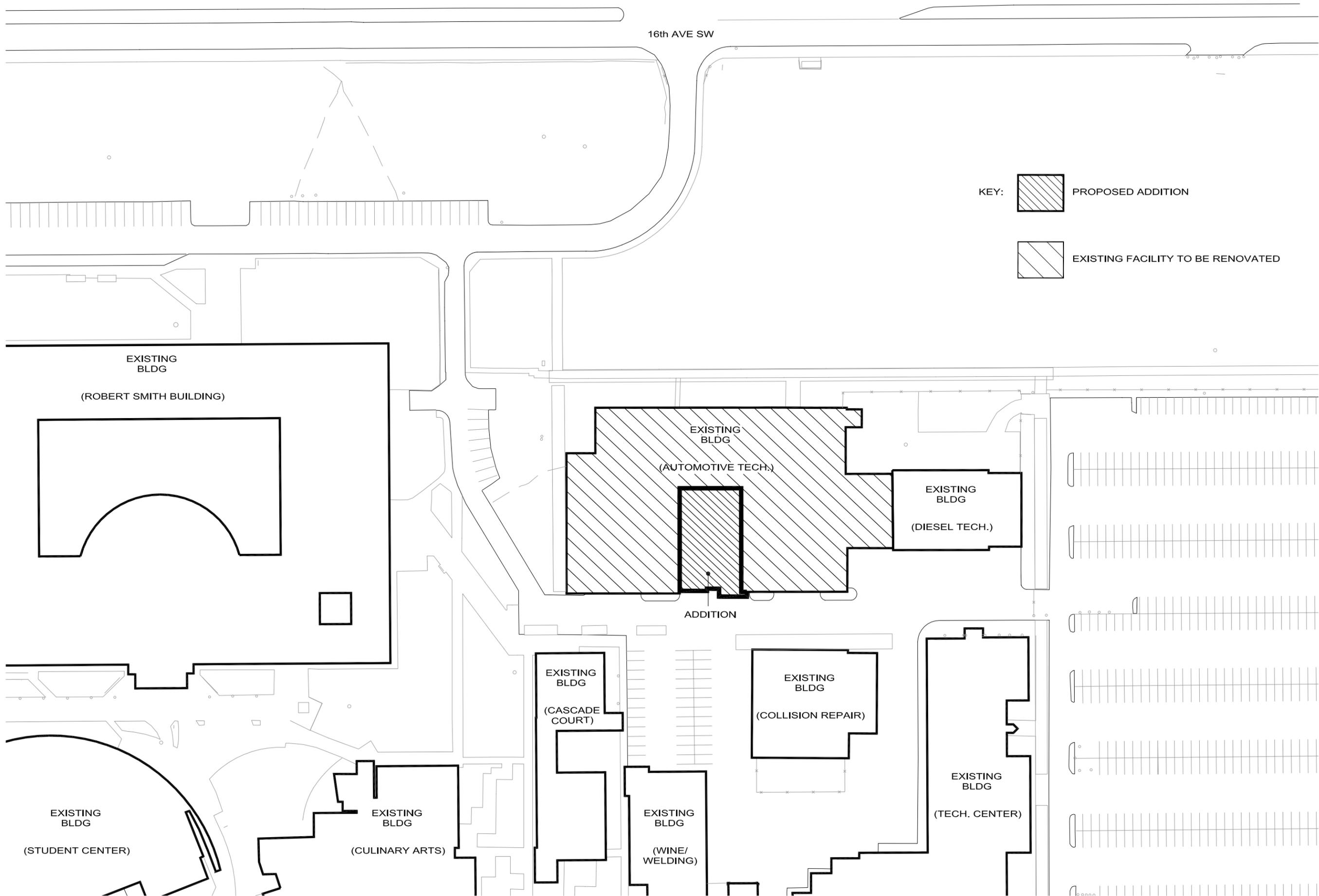
## **APPENDIX C - DIAGRAMS & SKECTHES**



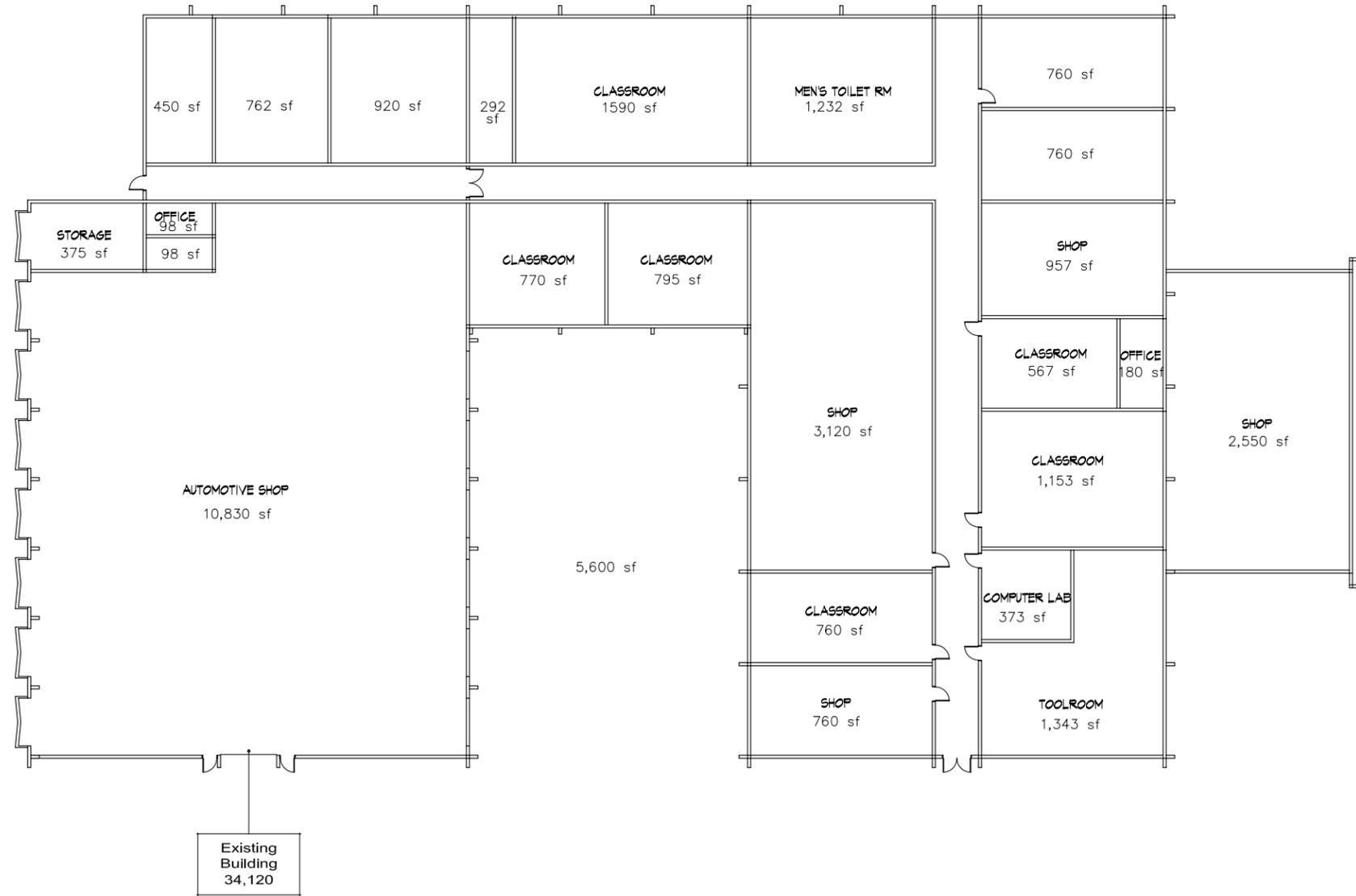
**2009-2011 Renovation Project Request**



December 2007

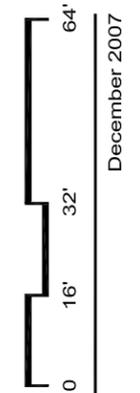


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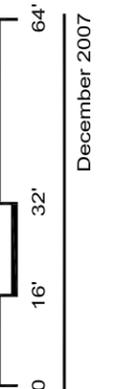


Existing Building  
34,120

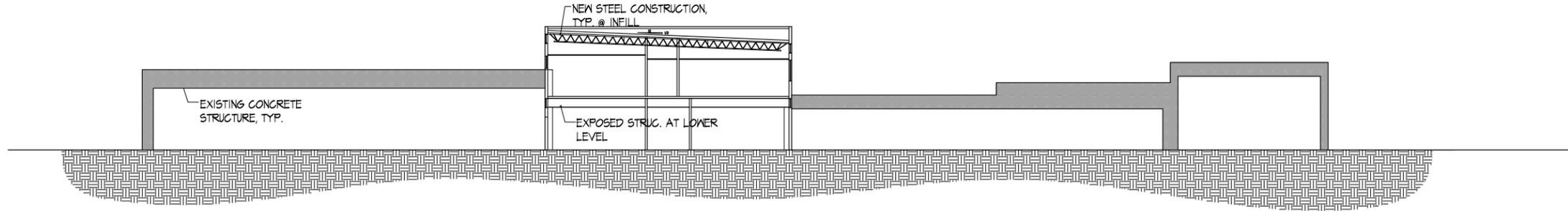
Ground Floor - Existing Plan



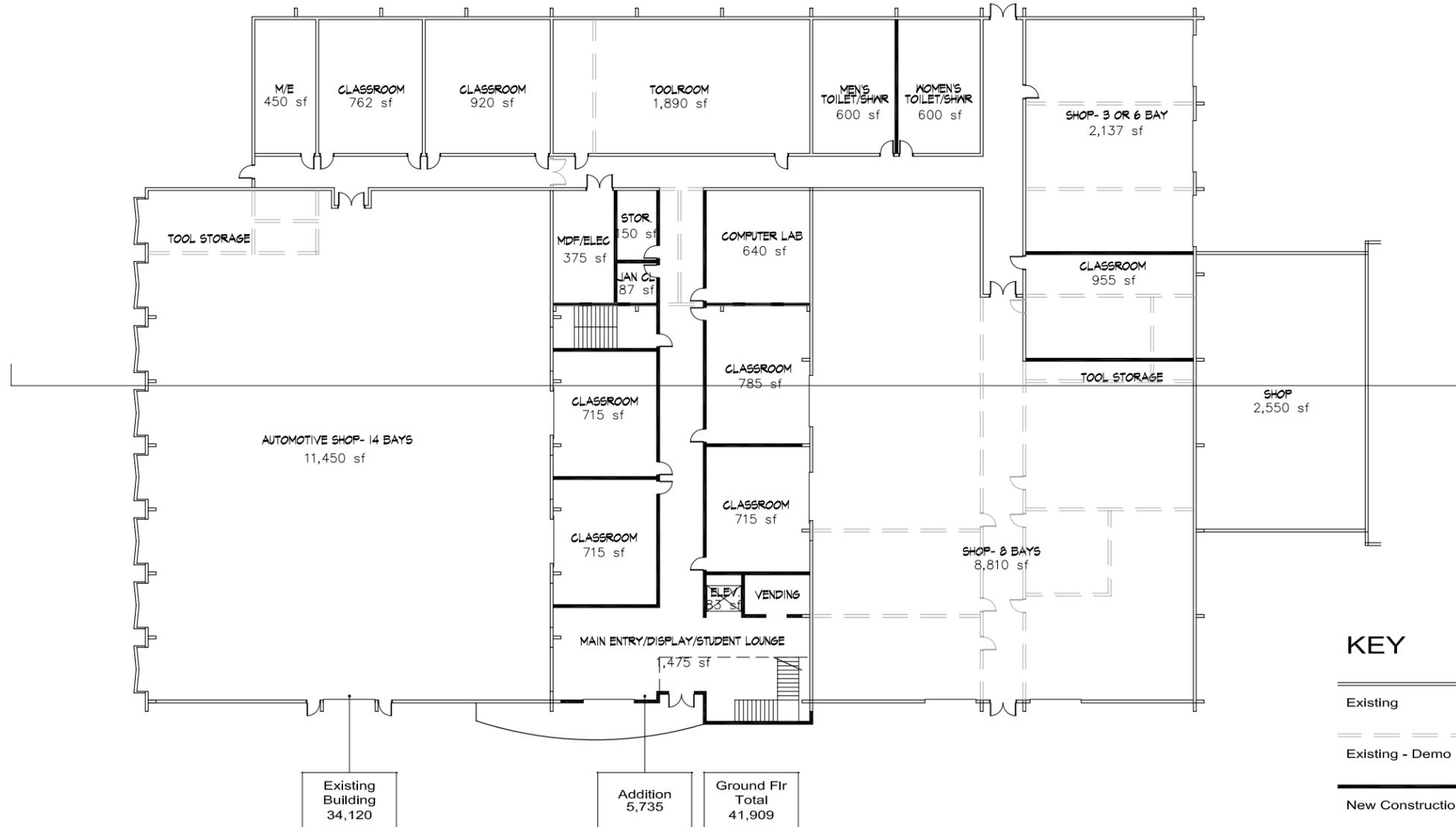
December 2007



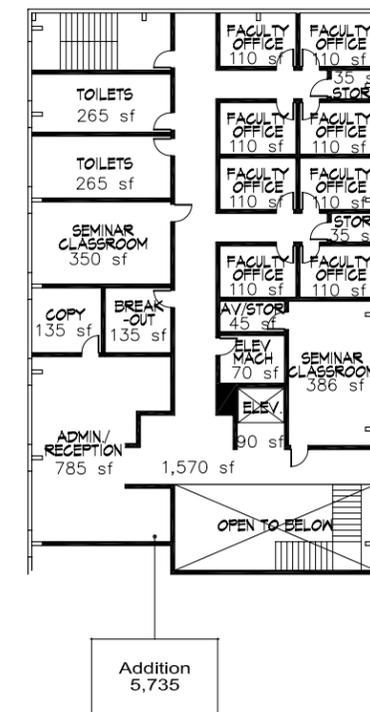
December 2007



Building Section - Proposed



Ground Floor - Proposed Plan



Upper Floor - Proposed Plan

Space Program Tabulation  
Assigned Area Analysis

**APPENDIX D - PROGRAM ANALYSIS**



**2009-2011 Renovation Project Request**

Automotive Technology  
**OPTIMIZED AREA ANALYSIS**

South Seattle Community College

CLASSROOM/LABS		Existing			Optimized		
Rm #	Space	Area	Student Capacity	SF per Student	SF per Student	Student Capacity	Adjusted Area
104	Dynamometer	760	8	95	140	8	1,120
105	Engine Stand Shop	957	8	120	140	8	1,120
106	Classroom	567	24	24	25	24	600
109	Classroom	340	16	21	25	16	400
108	Classroom	1,153	48	24	25	48	1,200
109	Computer Lab	373	24	16	30	24	720
110	Classroom	340	16	21	25	16	400
110	General Classroom	646	36	18	25	36	900
112	Transmission Lab	760	8	95	140	8	1,120
113	Classroom	760	36	21	25	36	900
115	Transmission Lab	3,120	36	87	140	36	5,040
127	Classroom	1,590	60	27	25	60	1,500
128	Classroom	795	36	22	25	36	900
129	Classroom	770	36	21	25	36	900
150	Automotive Shop	10,830	84	129	140	84	11,760
		21,137	420			420	25,340

Faculty Offices		Existing			Optimized		
Rm #	Space	Area	Capacity	SF per Occ.	SF per Occ.	Capacity	Adjusted Area
107	FT-Faculty Office	180	2	90	120	2	240
146	FT-Faculty Office	98	1	98	120	1	120
NA	Faculty Offices	-	1	-	120	1	120
NA	Faculty Office	-	1	-	120	1	120
NA	Faculty Offices	-	1	-	120	1	120
NA	Faculty Office	-	1	-	120	1	120
NA	Faculty Offices	-	1	-	120	1	120
NA	Faculty Offices	-	1	-	120	1	120
		278	9			9	1,080

Student Services		Existing			Optimized		
Rm #	Space	Area	Capacity	SF per Occ.	SF per Occ.	Capacity	Adjusted Area
110	Tool Room	1,343	-	-	-	-	1,343
		1,343					1,343

AREA SUMMARY		Existing		Optimized	
SUBTOTAL ASSIGNED AREA		22,758			27,763
Allowed Increase @ 30%					8,329
<b>TARGET NET ASSIGNABLE AREA</b>					<b>36,092</b>

**Automotive Technology Renovation**  
**South Seattle Community College**

**PROPOSED PROGRAM AREA**

12/5/2007

# Space Name	Space Category	Design Capacity	Quantity	Unit Area	Proposed Area	Comments	
<b>1.0 Administration</b>							
1.1 Program Admin/reception	Administration	4	1	785	785	Reception and waiting area	
1.2 Copy Room	Administration	1	1	135	135		
1.3 Conference	Administration	4	1	135	135		
					<i>subtotal nsf</i>	1,055	
<b>2.0 Faculty</b>							
2.1 Faculty Office	Faculty Office	1	8	110	880		
					<i>subtotal nsf</i>	880	
<b>3.0 Classrooms/ Labs</b>							
3.1 General Automotive Shop	Skills Lab	56	1	11450	11,450	14 vehicle bays w/lifts	
3.2 Special Automotive Shop	Skills Lab	40	1	8810	8,810	10 vehicle bays w/lifts	
3.3 Diagnostics Shop	Skills Lab	12	1	2137	2,137	3-bay shop with lifts	
3.4 Shop-classroom	Tech. Classroom	24	5	750	3,750	Adj to Shops	
3.5 General Classroom	Gen'l Classroom	32	2	900	1,800		
3.6 Computer Lab	Gen'l Classroom	24	1	640	640		
3.7 Small-group Classrooms	Seminar/Conf.	12	2	360	720		
					<i>subtotal nsf</i>	29,307	
<b>4.0 Support</b>							
4.1 Student Tool Crib	Support	1	1	1890	1,890		
4.2 Display Student Lounge	Support	1	1	1475	1,475		
					<i>subtotal nsf</i>	3,365	
					<b>TOTAL NSF</b>	<b>34,607</b>	36,092 Target assigned NSF after "right sizing" existing plus 30% increase
Support			at 10%		3,461	Mech., Elec., Custodial	
Circulation			at 12%		4,145	Circulation/corridors	
Walls and Structure			at 8%		3,377	Exterior and interior walls and structure	
<b>GRAND TOTAL GSF</b>					<b>45,590</b>		

Criteria Scoring Summary  
2007 FCS Scoring  
Photographs of Existing Conditions  
Structural Evaluation  
Excerpt from SSCC Campus Master Plan  
SSCC Institutional Goals  
Preliminary LEED Checklist



**APPENDIX E - SUPPORTING DATA**  
**2009-2011 Renovation Project Request**



## SCORING CRITERIA SUMMARY

### Minimum Criteria

- Project does not exceed 70,000-gsf. Allowable 30% increase in ASF totals 36,092 ASF proposed is 34,607.
- Current Replacement Cost (CRC) is \$9.553M. 80% CRC is \$7.642M. Estimated Renovation cost is \$5.854M
- Facility is at a single site
- Building has been used for over 20-years
- Project will be designed to achieve LEED Silver
- Predesign is underway and schedule for 1 July 08 Completion
- Project is not dependant on any other request

### Age of the Building

The Automotive Technology Building is one of the original buildings built on the campus 37 years ago.

### Condition of the Buildings

Automotive Technology received a 2007 FCS score of 402.

### Ability to Achieve Institutional Goals

This project is one of the key elements of the SSCC Master Plan. This project will facilitate achieving the SSCC Strategic plan for providing integrated education while insuring a quality educational and training environment that meets a proven student need for specialized automotive training, especially in the emerging issues of sustainable transportation.

The proposed renovation and addition to the Automotive Technology Building will directly support the following institutional goals:

- I. This project directly enhances the ability of SSCC to meet its goal to provide comprehensive instructional programs which include professional technical education that meet the diverse needs of students and its communities. It will provide industry-based and service learning opportunities for students.
- II. Providing classrooms directly adjacent to the shops, increasing vehicle bays for 18 to 24 and increasing support space for female students meets SSCC goal of providing responsive student services and programs which support the learning and success of South's diverse student population.
- IV. This project will expand SSCC's ability to meet their goal of expanding partnerships with business and industry particularly the independent automotive repair businesses in the South Seattle Community College neighborhood.

### Program Related Improvements

This project provides the following percentage of project spaces:

Classrooms/Labs:	85%
Student Services:	10%
Faculty Offices:	2%
Administrative:	3%



### **Health/Safety/Code**

This project will correct serious fire and life safety deficiencies as well as meeting current seismic codes and providing full ADA access. It will also bring the campus into compliance for gender access (female facilities).

### **College Project Priority**

It is the #2 Priority in SSCC Capital Development Plan.

### **Extension of Building Life**

The proposed project will extend the life of the Automotive Technology Building another 30-40 years

### **Justification for Additional Space**

The primary space shortage at Automotive Technology is in classrooms and student support spaces. The additional space requested has been focused on classrooms and is critical to the safe and efficient use of the shop. Lastly the added space is necessary to provide for student support spaces such as lockers and female facilities that are simply not provided in the existing building.

### **Fitness for Use**

The existing building has code deficiencies, inadequate size, is in poor condition, lacks technology support, has poor accessibility, and poor environmental control. With the planned renovation and addition the Automotive Technology Building will have optimal ratio of classrooms to shops and they will be located directly adjacent to the shops they serve. This is essential to the effectiveness of technical hands-on education and meeting the I-Best instructional model.

## BUILDING CONDITION RATING

COLLEGE: SOUTH SEATTLE COMMUNITY COLLEGE

SITE: MAIN CAMPUS

BLDG: 064AUT AUTOMOTIVE TECHNOLOGY

34,120 SF

BUILT: 1970

REMODELED:

PREDOMINANT BLDG. USE: Vocational Arts

CONSTRUCTION TYPE: Heavy

CRV/SF: \$280

MGMT. CODE: Major Renovation - \$80-\$160/SF

CURRENT REPLACEMENT VALUE: \$9,553,600

Component	Score	Comment
<i>Primary Systems</i>		
Structure	8	Conc. frame and tilt-up panels, double tee roof
Exterior Closure	8	Conc. struc., exp. marble aggregate panels
Roofing	24	Built-up roof 1992, some blisters and ponding; skylights recently replaced
<i>Subtotal</i>	<b>40</b>	
<i>Secondary Systems</i>		
Floor Finishes	9	VCT corridors/classrooms; carpet some classrooms; exp. concrete labs.; ceramic tile
Walls - Finishes	9	Gyp. bd., CMU, ceramic tile; worn areas
Ceiling Finishes	9	Susp. AcT in corridors & clsrms; exposed struc. w/infill glue-on AcT in labs./RR
Doors-Hardware	3	Alum. entries; int. wood doors/ frames; overhead shop doors
<i>Subtotal</i>	<b>30</b>	
<i>Service Systems</i>		
Elevators	6	1 story
Plumbing	40	Old piping failing, leaks beneath slab
HVAC	40	(3) Old AHUs; (20) old FCUs; (1) packaged HP needs replacement; (3) newer RTUs
Electrical Service	24	Old service now oversized, but some failed bus bars abandoned in place
Lights/Power	8	Upgraded T-8 electronic ballasts
<i>Subtotal</i>	<b>118</b>	
<i>Safety Systems</i>		
Life/Safety	30	Generally meets codes for vintage of construction; illum. exit signs, no emerg. lights
Fire Safety	30	Zoned FA (pull stations only); no sprinklers
Haphazard Mod.	5	No major modifications to date
<i>Subtotal</i>	<b>65</b>	
<i>Functional Standards</i>		
Adaptability	18	Interior spaces are modifiable; difficult to modify struc. system or exp. bldg.; limited site
Deferred Maint	18	Worn restrooms and locker rooms
Remaining Life	18	Major systems deteriorating but maintained; RUL 5-15 years
Adequacy	18	Amenities are adequate but need upgrading; no common area
Appearance	18	Functional and maintained spaces but not very attractive
<i>Subtotal</i>	<b>90</b>	
<i>Energy Conservation</i>		
Wall/Ceiling Insul.	12	Insulation present but not to current standards
Glazing	20	Single glazing; alum. storefront in classroom #114 is racked by building structure
<i>Subtotal</i>	<b>32</b>	
Barrier-Free Access	27	Partially compliant

**Total Score 402** (Score Range = 146 - 730) **Previous Biennium Score: 340**

**Recommended Rating is: Needs Improvement Through Renovation**



Automotive Technology Building Campus Location

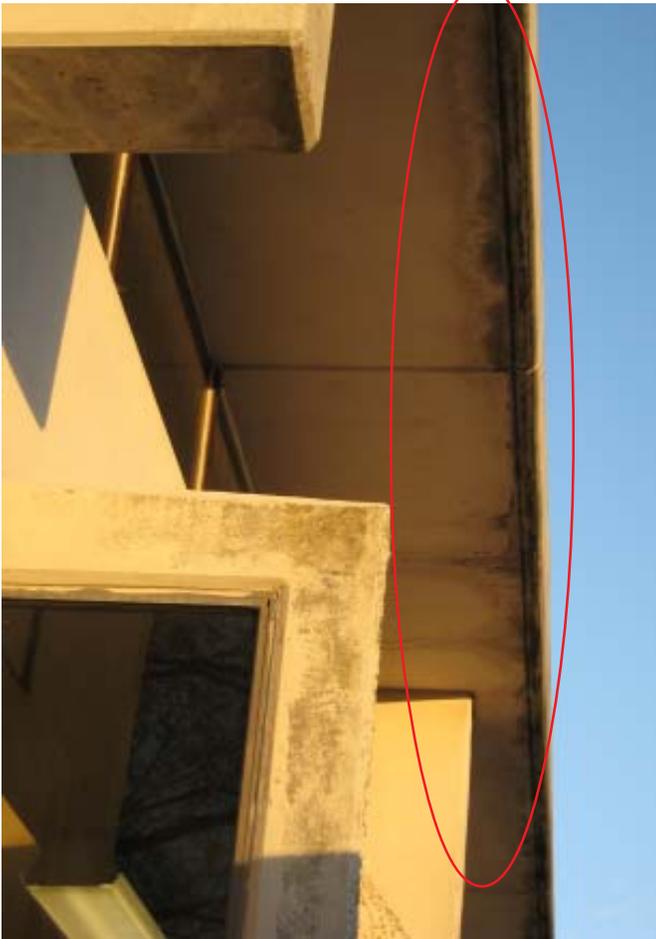
Standing water on roof and poor drainage leads to water infiltration and damage @ clerestory windows in high bays



Automotive Technology Building from southeast (high-bay shops)



Water damage at concrete overhangs





Lack of vehicle bays necessitates “stacking” of project cars also taking a lift out of use.

Also compromises safety.

Lifts lack seismic bracing

Nonfunctional built-in equipment makes use of bays for training impossible.

Un-functional & irreparable dynamometer in-floor





Lack of storage necessitates use of training bay



Original classroom converted for use as a central tool room



Need for a dedicated controlled haz-mat collection area takes-over vehicle training bay



Faculty office built in shop area  
displacing training bays



Walls removed



Classroom removed to provide  
additional shop area



Lack of faculty offices results in administrative use of classrooms.



Poor toilet/locker facilities in addition to inadequate/unequal facilities for female students



Poor mechanical system includes residential grade electric wall heaters in corridors and results in the need for portable electrical heaters in classrooms



Inoperable HVAC system removed and "temporary" fans installed



## STRUCTURAL EVALUATION

FOR

**SOUTH SEATTLE COMMUNITY COLLEGE  
AUTOMOTIVE TECHNOLOGY BUILDING  
SEATTLE, WA**

**PREPARED BY**

**PCS STRUCTURAL SOLUTIONS**



EXPIRES: 9/9/ 2009

**NOVEMBER 12, 2007  
08-103.02**

NOVEMBER 10, 2007

**STRUCTURAL EVALUATION FOR  
SOUTH SEATTLE COMMUNITY COLLEGE  
AUTOMOTIVE TECHNOLOGY BUILDING  
SEATTLE, WA**

**A. SCOPE OF WORK**

Our scope of work included a walk through evaluation of the building looking for signs of structural distress, deterioration, differential settlement and overall structural integrity. We were able to review the original 1969 Construction Documents. We also utilized ASCE 31-03 Seismic Evaluation of Existing Buildings structural checklists to help identify structural concerns inherent with building construction of this type. Lateral and vertical capacity checks were beyond the scope of this project.

We have based our recommendations for extending the life of the structure on the evaluation methods noted above and our experience in renovating similar structures in the Puget Sound area.

**B. TYPE OF CONSTRUCTION/STRUCTURAL SYSTEM**

Automotive Building (#127)

Vertical Load Resisting System:

The Automotive Technology Building is a one story facility, with concrete grade-beam foundations with concrete slab on grade floor construction. The roof is constructed of precast/prestressed concrete "tri-slabs". The tri-slabs span between precast/prestressed concrete girders, which are in turn supported by pre-cast concrete columns and walls.

Lateral Force Resisting System:

The lateral load resisting system consists of the rigid concrete roof diaphragm, which transfer lateral forces to pre-cast concrete shear walls. The walls are anchored to the foundation with hooked mild-steel reinforcing, located along the entire length of the wall.

Diesel and Heavy Equipment Technology Building (#128)

**STRUCTURAL EVALUATION FOR  
SOUTH SEATTLE COMMUNITY COLLEGE  
AUTOMOTIVE TECHNOLOGY BUILDING  
SEATTLE, WA**

Vertical Load Resisting System:

The Heavy Duty Technology Building is a one story facility with a partial mezzanine, with concrete grade-beam foundations with concrete slab on grade floor construction. The roof over the high-bay area is constructed of precast/prestressed concrete "tri-slabs". The tri-slabs span between precast/prestressed concrete girders, which are in turn supported by pre-cast concrete columns and walls. The floor of the mezzanine, as well as the roof above the mezzanine, is cast-in-place concrete beam/slab construction. The mezzanine floor and roof are supported by pre-cast concrete walls.

Lateral Force Resisting System:

The lateral load resisting system consists of the rigid concrete roof diaphragm, which transfer lateral forces to pre-cast concrete shear walls. The walls are anchored to the foundation with hooked mild-steel reinforcing, located along the entire length of the wall.

**C. OBSERVATIONS AND COMMENTS**

- The structural system appears to be well designed and detailed for the era in which it was built. However, knowledge of how seismic forces affect buildings has improved dramatically since the building was designed over 30 years ago. In turn, many detailing requirements for pre-cast connections and concrete shear wall construction have significantly changed.
- Building #127 – The corners of several of the precast columns, at the locations of the precast spandrel beam bearing, have cracked.
- Building #127 – Foundation settlement has occurred on the north side of the courtyard. Windows and doors are visually out-of-square.
- Building #128 - The exterior exposed ends of many of the primary precast girders have spalled, and reinforcing is exposed.

**D. RECOMMENDATIONS**

The structural concerns and recommendations noted below outline the structural work anticipated to upgrade the existing building. Most of the structural concerns deal with the anticipated seismic performance of the building.

**STRUCTURAL EVALUATION FOR  
SOUTH SEATTLE COMMUNITY COLLEGE  
AUTOMOTIVE TECHNOLOGY BUILDING  
SEATTLE, WA**

Item	Structural Concern	Structural Recommendation
1	It appears that the system depends on many of the precast spandrel beams and precast columns to act as a lateral force resisting frame. These elements, while appearing to be detailed in accordance with applicable building codes at the time of construction, do not meet current code provisions.	While the system does not meet the intent of the current code, if the building experienced moderate seismic forces, the biggest issue would be high lateral deformation. However, a collapse of the system would not be expected. Reducing lateral deformation would require the installation of concrete shear walls at the edges of the buildings that currently do not have any (i.e. north face of Building #127 High Bay)
2	Concrete girders, columns, etc have spalled ends, exposing the reinforcing to the weather.	Repair all rusted reinforcing, then epoxy grout all cracks and grout pack all deteriorated beam ends.
3	Differential foundation settlement has occurred on the south face of the interior courtyard.	Monitor the condition to determine if settlement is continuing. If it is, then underpinning of the existing foundation with micropiles is recommended.

**E. CONCLUSION**

The structural concerns noted for the Automotive Building is common for pre-cast structures constructed around 1970. The primary structural concern is the lack of adequate shear walls in some locations, along with the exposed reinforcing at deteriorated concrete.

Another structural issue with pre-cast concrete structures is their inflexibility when it comes to alterations. Pre-stressed elements work well in the original condition, but are difficult to modify due to the tension in the cables and the lack of capacity if loading parameters are altered.

**3.7.12 Basic Structural Checklist for Building Type PC2: Precast Concrete Frames with Shear Walls**

This Basic Structural Checklist shall be completed where required by Table 3-2.

Each of the evaluation statements on this checklist shall be marked Compliant (C), Non-compliant (NC), or Not Applicable (N/A) for a Tier 1 Evaluation. Compliant statements identify issues that are acceptable according to the criteria of this standard, while non-compliant statements identify issues that require further investigation. Certain statements may not apply to the buildings being evaluated. For non-compliant evaluation statements, the design professional may choose to conduct further investigation using the corresponding Tier 2 Evaluation procedure; corresponding section numbers are in parentheses following each evaluation statement.

**C3.7.12 Basic Structural Checklist for Building Type PC2**

These buildings consist of a frame assembly of precast concrete girders and columns with the presence of shear walls. Floor and roof framing consists of precast concrete planks, tees, or double-tees supported on precast concrete girders and columns. Lateral forces are resisted by precast or cast-in-place concrete shear walls. Diaphragms consist of precast elements interconnected with welded inserts, cast-in-place closure strips, or reinforced concrete topping slabs.

**Building System**

- |   |    |     |  |
|---|----|-----|--|
| C | NC | N/A | LOAD PATH: The structure shall contain a minimum of one complete load path for Life Safety and Immediate Occupancy for seismic force effects from any horizontal direction that serves to transfer the inertial forces from the mass to the foundation. (Tier 2: Sec. 4.3.1.1) |
|---|----|-----|--|
- |   |    |     |   |
|---|----|-----|---|
| C | NC | N/A | MEZZANINES: Interior mezzanine levels shall be braced independently from the main structure, or shall be anchored to the lateral-force-resisting elements of the main structure. (Tier 2: Sec. 4.3.1.3) |
|---|----|-----|---|
- |   |    |     |   |
|---|----|-----|---|
| C | NC | N/A | WEAK STORY: The strength of the lateral-force-resisting system in any story shall not be less than 80 percent of the strength in an adjacent story, above or below, for Life Safety and Immediate Occupancy. (Tier 2: Sec. 4.3.2.1) |
|---|----|-----|---|
- |   |    |     |   |
|---|----|-----|---|
| C | NC | N/A | SOFT STORY: The stiffness of the lateral-force-resisting system in any story shall not be less than 70 percent of the lateral-force-resisting system stiffness in an adjacent story above or below, or less than 80 percent of the average lateral-force-resisting system stiffness of the three stories above or below for Life Safety and Immediate Occupancy. (Tier 2: Sec. 4.3.2.2) |
|---|----|-----|---|
- |   |    |     |  |
|---|----|-----|--|
| C | NC | N/A | GEOMETRY: There shall be no changes in horizontal dimension of the lateral-force-resisting system of more than 30 percent in a story relative to adjacent stories for Life Safety and Immediate Occupancy, excluding one-story penthouses and mezzanines. (Tier 2: Sec. 4.3.2.3) |
|---|----|-----|--|
- |   |    |     |   |
|---|----|-----|---|
| C | NC | N/A | VERTICAL DISCONTINUITIES: All vertical elements in the lateral-force-resisting system shall be continuous to the foundation. (Tier 2: Sec. 4.3.2.4) |
|---|----|-----|---|
- |   |    |     |  |
|---|----|-----|--|
| C | NC | N/A | MASS: There shall be no change in effective mass more than 50 percent from one story to the next for Life Safety and Immediate Occupancy. Light roofs, penthouses, and mezzanines need not be considered. (Tier 2: Sec. 4.3.2.5) |
|---|----|-----|--|
- |   |    |     |  |
|---|----|-----|--|
| C | NC | N/A | TORSION: The estimated distance between the story center of mass and the story center of rigidity shall be less than 20 percent of the building width in either plan dimension for Life Safety and |
|---|----|-----|--|

Immediate Occupancy. (Tier 2: Sec. 4.3.2.6)

- C (NC) N/A DETERIORATION OF CONCRETE: There shall be no visible deterioration of concrete or reinforcing steel in any of the vertical- or lateral-force-resisting systems. (Tier 2: Sec. 4.3.3.4) *GIRDER ENDS, TOPS OF COLUMNS*
- (C) NC N/A POST-TENSIONING ANCHORS: There shall be no evidence of corrosion or spalling in the vicinity of post-tensioning or end fittings. Coil anchors shall not have been used. (Tier 2: Sec. 4.3.3.5)
- (C) NC N/A CONCRETE WALL CRACKS: All existing diagonal cracks in wall elements shall be less than 1/8 inch for Life Safety and 1/16 inch for Immediate Occupancy, shall not be concentrated in one location, and shall not form an X pattern. (Tier 2: Sec. 4.3.3.9)

**Lateral-Force-Resisting System**

- (C) NC N/A COMPLETE FRAMES: Steel or concrete frames classified as secondary components shall form a complete vertical-load-carrying system. (Tier 2: Sec. 4.4.1.6.1)
- (C) NC N/A REDUNDANCY: The number of lines of shear walls in each principal direction shall be greater than or equal to 2 for Life Safety and Immediate Occupancy. (Tier 2: Sec. 4.4.2.1.1)
- C NC N/A *NOT PERFORMED* SHEAR STRESS CHECK: The shear stress in the concrete shear walls, calculated using the Quick Check procedure of Section 3.5.3.3, shall be less than the greater of 100 psi or  $2\sqrt{f'_c}$  for Life Safety and Immediate Occupancy. (Tier 2: Sec. 4.4.2.2.1)
- (C) NC N/A REINFORCING STEEL: The ratio of reinforcing steel area to gross concrete area shall be not less than 0.0015 in the vertical direction and 0.0025 in the horizontal direction for Life Safety and Immediate Occupancy. The spacing of reinforcing steel shall be equal to or less than 18 inches for Life Safety and Immediate Occupancy. (Tier 2: Sec. 4.4.2.2.2) *.0020 VERT  
.0027 HORIZ*

**Diaphragms**

- C (NC) N/A TOPPING SLAB: Precast concrete diaphragm elements shall be interconnected by a continuous reinforced concrete topping slab. (Tier 2: Sec. 4.5.5.1)

**Connections**

- (C) NC N/A WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support shall be anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. ~~Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 3.5.3.7.~~ (Tier 2: Sec. 4.6.1.1)
- (C) NC N/A TRANSFER TO SHEAR WALLS: Diaphragms shall be connected for transfer of loads to the shear walls for Life Safety and ~~the connections shall be able to develop the lesser of the shear strength of the walls or diaphragms for Immediate Occupancy.~~ (Tier 2: Sec. 4.6.2.1)
- C (NC) N/A TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements shall be doweled for transfer of forces into the shear wall or frame elements for Life Safety, and the dowels shall be able to develop the lesser of the shear strength of the walls, frames, or slabs for Immediate Occupancy. (Tier 2: Sec. 4.6.2.3)
- (C) NC N/A FOUNDATION DOWELS: Wall reinforcement shall be doweled into the foundation for Life Safety, ~~and the dowels shall be able to develop the lesser of the strength of the walls or the uplift capacity of the foundation for Immediate Occupancy.~~ (Tier 2: Sec. 4.6.3.5)
- (C) NC N/A GIRDER/COLUMN CONNECTION: There shall be a positive connection utilizing plates, connection hardware, or straps between the girder and the column support. (Tier 2: Sec. 4.6.4.1)

**South Seattle Community College**  
**Institutional Goals**  
**2005-2007**

South Seattle Community College (SSCC) commits itself to meeting the following goals by constantly evolving as an educational community through continuous self-assessment. The College uses an assessment plan to evaluate itself and uses the results in decision-making, planning, and allocation of resources. The College promotes communication, collaboration, and learning among all employees.

**I. SSCC provides comprehensive instructional programs which include: college transfer, professional technical education, apprenticeship training, and life-long learning that meet the diverse needs of students and our communities.**

A. The College community creates the conditions that enable, engage and prepare students to meet their goals for life and work.

B. The College's courses and programs teach or advance the following **Student Learning Outcomes**:

- Communication
- Personal Responsibility
- Computation
- Critical Thinking & Problem Solving
- Human Relations
- Information Literacy
- Technology

These **Student Learning Outcomes** refer to the general knowledge, skills, and abilities that every students graduating with a certificate or degree should possess.

C. The College integrates diverse multicultural and global issues in the curriculum.

D. The College delivers programs and training in a variety of formats responsive to students' needs.

E. The College provides institutional support for instructional innovation across the curriculum.

F. The College provides industry-based and service learning opportunities for students.

G. The College ensures access to technology for students.

**II. SSCC provides responsive student services and programs which support the learning and success of its diverse student population.**

A. The College's programs and services reflect a commitment to diversity.

B. The College's programs and services responsively address the changing needs of students by providing institutional support for innovation.

C. The College commits to an open-door policy of universal access.

D. The College's programs and services support student learning.

E. The College's programs and services promote overall student success.

F. The College ensures that campus technology and equipment are continually upgraded to match business, industry, and community standards.

- G. The College maintains and enhances the natural environment of its campus.
  - H. The College provides a physically accessible, safe and secure environment.
  - I. The College provides a healthful learning and working environment that is ecologically sensitive.
  - J. The College periodically assesses the environment to address the needs of students.
- III. **SSCC supports the renewal of professional knowledge and skills in its diverse community of highly qualified personnel.**
- A. The College provides resources for training for employees to:
    - Upgrade and/or enhance their areas of expertise
    - Use current and emerging technology to meet the needs of students and to access information, and
    - Promote diversity through professional development
  - B. The College recruits highly qualified personnel.
- IV. **SSCC collaborates with business and industry, labor, community-based organizations, K-12 schools, and other higher education institutions.**
- A. The College builds and values partnerships with business and industry, labor, and community-based organizations.
  - B. The College builds partnerships with other higher education institutions and K-12 schools.
  - C. The College adapts, grows and improves its educational programs in response to feedback from students, input from the community, needs of business and industry, and the best economic projections of employment opportunity.
  - D. The College leverages public support for education by attracting private philanthropic support from individuals, community groups and businesses.
- V. **SSCC ensures the financial health of the college.**
- A. The College develops and maintains effective systems to manage its budget and enrollment that ensure fiscal integrity, quality programs and services, and enduring institutional viability.
  - B. The College expands and strengthens communication, cooperation, and coordination with the SSCC Foundation for the benefit of the entire campus community.
  - C. The College pursues alternative funding opportunities to advance its goals.



LEED-NC

## LEED-NC Version 2.2 Registered Project Checklist

Automotive Technology Building Renovation  
South Seattle Community College

Yes ? No

<b>6</b>		<b>8</b>	<b>Sustainable Sites</b>	<b>14 Points</b>
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Y				
			Prereq 1 <b>Construction Activity Pollution Prevention</b>	Required
1			Credit 1 <b>Site Selection</b>	1
1			Credit 2 <b>Development Density &amp; Community Connectivity</b>	1
		1	Credit 3 <b>Brownfield Redevelopment</b>	1
1			Credit 4.1 <b>Alternative Transportation, Public Transportation Access</b>	1
1			Credit 4.2 <b>Alternative Transportation, Bicycle Storage &amp; Changing Rooms</b>	1
		1	Credit 4.3 <b>Alternative Transportation, Low-Emitting and Fuel-Efficient Vehicles</b>	1
1			Credit 4.4 <b>Alternative Transportation, Parking Capacity</b>	1
		1	Credit 5.1 <b>Site Development, Protect or Restore Habitat</b>	1
		1	Credit 5.2 <b>Site Development, Maximize Open Space</b>	1
		1	Credit 6.1 <b>Stormwater Design, Quantity Control</b>	1
		1	Credit 6.2 <b>Stormwater Design, Quality Control</b>	1
		1	Credit 7.1 <b>Heat Island Effect, Non-Roof</b>	1
		1	Credit 7.2 <b>Heat Island Effect, Roof</b>	1
1			Credit 8 <b>Light Pollution Reduction</b>	1

Yes ? No

<b>3</b>		<b>2</b>	<b>Water Efficiency</b>	<b>5 Points</b>
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1			Credit 1.1 <b>Water Efficient Landscaping, Reduce by 50%</b>	1
		1	Credit 1.2 <b>Water Efficient Landscaping, No Potable Use or No Irrigation</b>	1
1			Credit 2 <b>Innovative Wastewater Technologies</b>	1
1			Credit 3.1 <b>Water Use Reduction, 20% Reduction</b>	1
		1	Credit 3.2 <b>Water Use Reduction, 30% Reduction</b>	1

Yes ? No

<b>6</b>		<b>3</b>	<b>Energy &amp; Atmosphere</b>	<b>17 Points</b>
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Y				
			Prereq 1 <b>Fundamental Commissioning of the Building Energy Systems</b>	Required
			Prereq 2 <b>Minimum Energy Performance</b>	Required
			Prereq 3 <b>Fundamental Refrigerant Management</b>	Required
4			Credit 1 <b>Optimize Energy Performance</b>	1 to 10
		1	Credit 2.1 <b>On-Site Renewable Energy</b>	1 to 3
1			Credit 3 <b>Enhanced Commissioning</b>	1
1			Credit 4 <b>Enhanced Refrigerant Management</b>	1
		1	Credit 5 <b>Measurement &amp; Verification</b>	1
		1	Credit 6 <b>Green Power</b>	1

continued...

Yes ? No

**9** **Materials & Resources** **13 Points**

Y			Prereq 1	<b>Storage &amp; Collection of Recyclables</b>	Required
1			Credit 1.1	<b>Building Reuse</b> , Maintain 75% of Existing Walls, Floors & Roof	1
	1		Credit 1.2	<b>Building Reuse</b> , Maintain 100% of Existing Walls, Floors & Roof	1
1			Credit 1.3	<b>Building Reuse</b> , Maintain 50% of Interior Non-Structural Elements	1
1			Credit 2.1	<b>Construction Waste Management</b> , Divert 50% from Disposal	1
1			Credit 2.2	<b>Construction Waste Management</b> , Divert 75% from Disposal	1
		1	Credit 3.1	<b>Materials Reuse</b> , 5%	1
		1	Credit 3.2	<b>Materials Reuse</b> , 10%	1
1			Credit 4.1	<b>Recycled Content</b> , 10% (post-consumer + ½ pre-consumer)	1
1			Credit 4.2	<b>Recycled Content</b> , 20% (post-consumer + ½ pre-consumer)	1
1			Credit 5.1	<b>Regional Materials</b> , 10% Extracted, Processed & Manufactured Regic	1
1			Credit 5.2	<b>Regional Materials</b> , 20% Extracted, Processed & Manufactured Regic	1
		1	Credit 6	<b>Rapidly Renewable Materials</b>	1
1			Credit 7	<b>Certified Wood</b>	1

Yes ? No

**9** **4** **Indoor Environmental Quality** **15 Points**

Y			Prereq 1	<b>Minimum IAQ Performance</b>	Required
Y			Prereq 2	<b>Environmental Tobacco Smoke (ETS) Control</b>	Required
1			Credit 1	<b>Outdoor Air Delivery Monitoring</b>	1
	1		Credit 2	<b>Increased Ventilation</b>	1
1			Credit 3.1	<b>Construction IAQ Management Plan</b> , During Construction	1
1			Credit 3.2	<b>Construction IAQ Management Plan</b> , Before Occupancy	1
1			Credit 4.1	<b>Low-Emitting Materials</b> , Adhesives & Sealants	1
1			Credit 4.2	<b>Low-Emitting Materials</b> , Paints & Coatings	1
1			Credit 4.3	<b>Low-Emitting Materials</b> , Carpet Systems	1
1			Credit 4.4	<b>Low-Emitting Materials</b> , Composite Wood & Agrifiber Products	1
1			Credit 5	<b>Indoor Chemical &amp; Pollutant Source Control</b>	1
	1		Credit 6.1	<b>Controllability of Systems</b> , Lighting	1
		1	Credit 6.2	<b>Controllability of Systems</b> , Thermal Comfort	1
		1	Credit 7.1	<b>Thermal Comfort</b> , Design	1
		1	Credit 7.2	<b>Thermal Comfort</b> , Verification	1
1			Credit 8.1	<b>Daylight &amp; Views</b> , Daylight 75% of Spaces	1
		1	Credit 8.2	<b>Daylight &amp; Views</b> , Views for 90% of Spaces	1

Yes ? No

**1** **4** **Innovation & Design Process** **5 Points**

		1	Credit 1.1	<b>Innovation in Design</b> : Provide Specific Title	1
		1	Credit 1.2	<b>Innovation in Design</b> : Provide Specific Title	1
		1	Credit 1.3	<b>Innovation in Design</b> : Provide Specific Title	1
		1	Credit 1.4	<b>Innovation in Design</b> : Provide Specific Title	1
1			Credit 2	<b>LEED® Accredited Professional</b>	1

Yes ? No

**34** **21** **Project Totals (pre-certification estimates)** **69 Points**

**Certified** 26-32 points **Silver** 33-38 points **Gold** 39-51 points **Platinum** 52-69 points