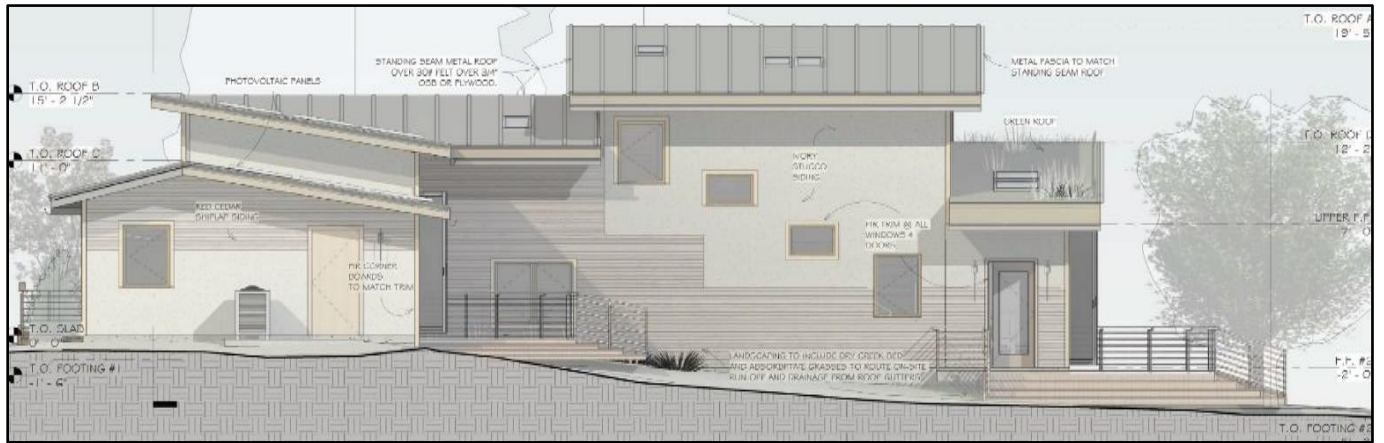


# Architectural Design & Drafting



## 2018 Program Review

Portland Community College  
Sylvania Campus  
TCB 214  
Friday, November 16, 2018  
12:00 – 2:00 PM

Peter Gramlich, *Full-Time Faculty and SAC Chair*  
Denise Roy, *Full-Time Faculty and Department Chair*  
Arlene McCashew, *Student Support Specialist*

# Architectural Design & Drafting

## 2018 Program Review

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## Purpose of Program/Discipline Review

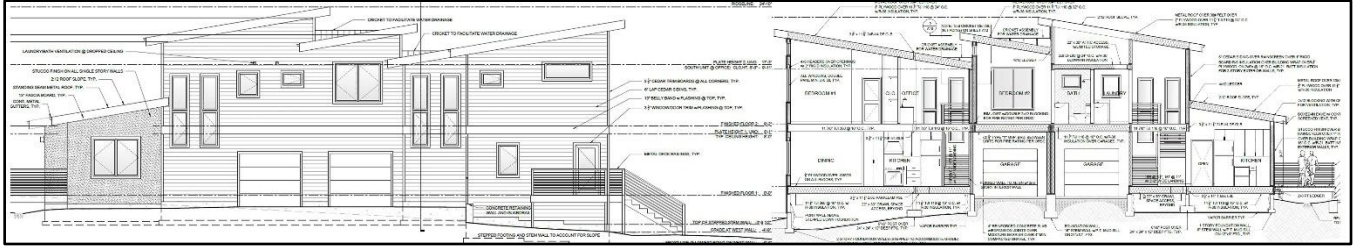
*"I landed a job at GBD! Just so you know, they specifically mentioned that my portfolio was a strong point among the interviewees, and really seemed to appreciate that I had a working knowledge of codes. I think this is an excellent program here at PCC, and the results speak for themselves. Keep it up!"*

*2017 Architectural Design/Drafting graduate*

*"PCC's Architectural Design/Drafting program allowed me to change careers; it was general enough that I was able to pursue many different types of work at the end of the program. I have found opportunities in Structural Engineering and Civil Engineering as well as Architecture. In my experience, the program was a fantastic investment well worth the time, energy, and tuition. I love that my job has allowed me to contribute to the development of our booming city."*

*2016 Architectural Design/Drafting graduate*

- Inform the college community about the Department of Architectural Design & Drafting, a Career and Technical Education (CTE) program at Portland Community College.
- Give Subject Area Committees (SACs) an opportunity to study specific topics related to the enhancement of student learning.
- Provide a forum for each SAC's findings to be communicated to Administration, during which the SAC and Administration can explore and determine ways to address the recommended improvements (including timelines and "check-in" points for follow-up actions between reviews).
- Create written records of what is working well, what can be improved, and specific plans for implementing chosen improvements.
- Collect information that will contribute to institutional accreditation and institutional assessment and improvement.



## 1. Program/Discipline Overview

### A. What are the educational goals or objectives of this program/discipline?

The educational goal of the Architectural Design & Drafting program at PCC is to prepare students for entry-level careers in architecture and drafting.

We continuously challenge our students to combine all components of the design process to produce professional quality work enabling them to stand out in a competitive field as they seek employment.

**Our primary goal is to continue to teach and develop curricula that support learning for students.** As part of a profession that features ever-changing CAD software, regularly-evolving building codes and modern construction techniques and sustainable design practices, the main goals of our program remain teaching curricula that reflects these realities and staying current in professional development to best prepare our students for their roles in the Portland marketplace and beyond.

**Our secondary goal is to support the Building Inspections program and the Sustainable Building Certificate** by creating connections with industry and practitioners. This allows faculty to stay current with industry best practices, and provides resources for instruction and curriculum.

**A third goal is to collaborate with other departments at the college,** including Interior Design, Building Construction Technology and Landscape Technology, as we seek to bridge disciplines and broaden the learning experiences we offer our students. We hold an especially close relationship with Interior Design in that our degree programs are overlapping.

### *How do these compare with national or professional program/discipline trends or guidelines?*

We strive to meet standards set forth by the **American Institute of Building Design (AIBD)** through its **National Council of Building Designer Certification (NCBDC)**. If design is a pattern language, the standards set forth by the NCBDC are the dictionary. There is great value placed upon graphic conventions, representations and standards in our field, and those set forth by the AIBD form the basis for the graphic language we teach our students.

There are somewhat different graphic languages for residential design (where the standards vary somewhat) and for commercial design (where they are quite consistent). We have to navigate both of these in our program; more of our recent graduates have tended to pursue the public/commercial design route.

A locally created rubric based on the standards set forth by the National Council of Building Designers is the annual **Technical Skills Assessment (TSA)**, created by our Subject Area Committee (SAC). This is required by the

State of Oregon and documents that we are teaching students the things we need to be teaching them, and that they are well equipped to pursue employment upon graduation, as measured by the skills they demonstrate in the capstone project of the 2<sup>nd</sup>-year design studios.

***Have they changed since the last review, or are they expected to change in the next five years?***

The goals of the program have remained consistent in the past five years. However, the complexity of the design profession has not. In response, our faculty training and professional development have expanded and grown in new directions, and the skills we ask our students to learn, while consistent, can be seen to be in a constant state of flux as technology and software advance.

Also, the economic climate has seen steady change over the past 5 years, and even as we sense we're coming out of the recession, the future is far from certain. It is vital that the depth and breadth of our students' work rise to meet the increased expectations of potential employers. We anticipate continuous curriculum revisions to keep up with ever-evolving technology and global and societal shifts in the next five years.

***B. Briefly describe curricular, instructional, or other changes that were made as a result of your SAC's recommendations in the last program review and/or the administrative response (Dec 6, 2013). Any changes NOT made as a result of the last program review should be described in the appropriate section elsewhere in this template.***

A lot has happened since late 2013. We've been an active department, and the changes we've made have been both prolific and exciting. In the administrative response of December 6, 2013, to our most recent program review, we heard the following key points, and responded as noted:

- While we appreciate your interests in "re-birthing" your Building Inspection program, we have some reservations, knowing that we just recently completed a teach-out in this program due to the down-turn in the economy/building construction industry.

*Are your interests in bringing back both the Residential and Commercial programs, or just one? If so, which one? You indicated that you've been experiencing difficulties with CWE for your Architecture students with the explanation of the slowly recovering economy. We are concerned that the Building Inspection Industry will lag behind that of Architecture, so would question if the timing is right to bring it back now? Additionally, the only full time faculty position from the previous Building Inspection program was moved to your Architecture Program when it closed. Before taking any further actions to bring Inspection back, it will be necessary to conduct a detailed review of the industry, the labor market, former Advisory Committee members, and former Co-op sites to determine the need. It will, also, be important to determine what resources will be needed, should the decision be made to restart Inspection. Please work with your Division Dean to address these concerns. (We should note that given the down turn in enrollments across the District, these past couple years, it has become increasingly important to scrutinize new and reconstituted programs very thoroughly before taking steps to either create something new or to reinstitute closed programs.)*

**The Department has a new AAS in Building Inspection Technology**, approved by the state in November 2015. It includes 90 credits and became effective Winter Term 2016. We've now graduated 3 classes of INSP students: at first, 6 in the initial year of the program while last fall (in 2017) we had 24 students in their first year. The

internship (CWE) program is also going well- this past summer the City of Portland employed four of our students in paid positions. Some students are getting hired by industry before completion of our coursework, and are finishing the program part-time in our evening classes.

We've also instituted a new short-term career-pathway certificate called the Residential Plans Examination Certificate.

- *We applaud you for these insightful recommendations. In particular, we understand the difficulty with and need for updating CWE in this economy. Your interests in tracking graduates is both timely and spot on, in as much as success/completion of our students is becoming increasingly important from the perspective of state funding. Your interests in creating videos to assist your students with applied math are very important.*
- *Regarding your math recommendation, we suggest, if you haven't already, you consult with the Math SAC to see if they have any suggestions or recommendations. Also, once videos are projected, please consider making them available to the Student Success Center/Alternative Learning Center.*

Some of our students have difficulty applying various math concepts to the industry-specific calculations required in their core classes. Through Student Support Specialist Arlene McCashew, we applied for and received a **PCC Foundation mini grant**; with these funds, adjunct faculty member Michelle Mueller was able to make a [structures video](#) to help students with math as applied to calculations in their structures classes. The video is available in PCC's YouTube channel, has been 'live' for 4 years and currently shows 36,925 views.

- Certificate in Software.

*We support this idea as a way to reconnect with your Industry partners while meeting their needs for upgrading the computer skills of their employees. We have a couple questions. Would these be separate sections exclusively offered to the workforce through Continuing Education Units? If so, it would be important to work with PCC's Finance Department to either bring back or create a new 1900 fund accounts to support these efforts. It would be most helpful if you would work with your Division Dean to develop a detailed plan, which, minimally should include: statement of need, number of sections to be offered per term, facilities availability/needed, software needed, and resources needed and enrollment/price points necessary to make the project successful and self-sustaining.*

Our department's idea of a certificate was in response to the then-growing enrollment in our CAD classes, and the desire to recognize that population of students with a certificate. The number of students taking our classes versus the number that actually graduate was a concern. (It probably still is!). Over time, it seemed that the college moved their focus from graduation rates to filling classes, and building overall enrollments (at which we have been successful).

**With that as a backdrop, our latest re-visit of a certificate is in response to an industry need for Revit users.** It may be possible for us to create a Revit or a CAD Certificate with the following courses: ARCH 126 (Intro to Autocad), 136 (Intermediate Autocad), 237 (Intro to Revit Architecture), 247 (Intermediate Revit Architecture), 112 (Intro to Commercial CDs) and maybe 202 (Commercial Studio). To be useful, a certificate should be max about 6 months in duration. If we go to the Curriculum Office with a CAD certificate request in the next few months, it would become effective next academic year, and people would be eligible to graduate in fall 2019 at the earliest.

*"I wanted to share the good news that I was very fortunate this week to receive two job offers -- one from the City of Portland and one from Clackamas County -- to work as a Residential Plans Examiner. Today, I accepted the City of Portland's offer and will begin work as a full-time Residential Plans Examiner with BDS on 9/12.*

*I am grateful for your flexibility and support during my past year with the Building Inspection program. I do intend to complete my A.A.S. and to add Commercial inspection and commercial plans review certifications based on my preparation at PCC."*

*2017 Building Inspection student*

*"Thank you for your enthusiastic lectures and passion for architecture and sustainability, as well as community involvement and new technology. You've really inspired me to think bigger and in ways that matter.*

*I've always been pigeonholed in my family as the one who can't do technical work and whose life doesn't really fit a picture of success, but this program has given me an amazing amount of personal freedom and also helped my family realize I'm not just a crazy artist. Many of your classes were the ones that gave me confidence and helped me produce work I am proud of. Thank you for your high standards and always answering my many questions with patience and interest. I am so grateful!"*

*2018 Architectural Design/Drafting graduate*



**2. Outcomes and Assessment: reflect on learning outcomes and assessment, teaching methodologies and content in order to improve the quality of teaching, learning and student success.**

A. **Course-Level Outcomes:** *The college has an expectation that course outcomes, as listed in the CCOG, are both assessable and assessed, with the intent that SACs will collaborate to develop a shared vision for course-level learning outcomes.*

i. *What is the SAC process for review of course outcomes in your CCOGs to ensure that they are assessable?*

We regularly align our course outcomes with class syllabi; it is standard department practice to include course outcomes just after the course description on the syllabus. The intent is to base our assignments, projects and tests on those measurable outcomes. The course outcomes are intentionally tangible: for example, the Site Planning class includes ‘apply basic concepts of site water management and erosion control and communicate strategies and requirements to clients and consultants’ as one of its three outcomes. Two assignments in the course deal directly with this skill set.

As noted elsewhere in this report, courses are regularly updated and revised. In so doing, we first ask ourselves which course outcomes we’d like to address. From there, we align the curriculum so as to best assess that learning occurs.

ii. *Identify and give examples of changes made in instruction to improve students’ attainment of course outcomes or outcomes of requisite course sequences (such as are found in in MTH, WR, ESOL, BI, etc.), **that were made based on the results of assessment of student learning.***

Most directly, the Department of Architectural Design & Drafting reviews the work of each graduating student: after the fall term with the work produced in ARCH 201 (Residential Studio) and again after the spring term with the work produced in ARCH 203 (Residential Renovation Studio). These courses best represent an Architectural Capstone project.

From information gleaned from past assessments, we have focused on the following:

- 1. The ability to produce high-quality architectural drawings** using a range of computer-aided drafting software, per the 2<sup>nd</sup> degree outcome, *Produce architectural drawings using a range of computer-aided*

*drafting software. Select and recommend building systems, structural systems, construction materials, and structural components responsive to the building's design.*

**Most of our courses focus on architectural production through software.** We have continuously upgraded software for all our courses, and always use the latest (now 2018 and 2019) iterations of Autocad, Revit and SketchUp, as well as InDesign and Photoshop. As an example, in both the ARCH 201 and 203 (Capstone) courses, each student is required to use Autocad and/or Revit, plus the structural design software Forte. We have no doubt our graduates are well-equipped for the job market due to their relevant and current software skills.

- 2. The ability to complete all phases of the design and documentation process** with consideration of its impact on the natural environment, per the 5<sup>th</sup> degree outcome, *Complete all phases of the design and documentation process with consideration of its impact on the natural environment.*

Framing architectural design through its impact on the natural environment is a core value of the department. Portland is a leader in this area and it is incumbent on all of us at PCC to consider more than just the needs and conditions of one building, site or client: good design is all a matter of how it integrates into the greater whole.

**To this end, all faculty members create lectures and build course materials to reflect current best practices** of sustainable design, community development, landscape design and site planning. Some clear examples of courses where instructors have introduced principles of sustainability include ARCH 101 (Intro to Residential design), ARCH 113 (Site Planning), ARCH 124 (Introduction to Building Systems), ARCH 134 (Energy Conservation Codes), ARCH 200 (Principles of Architectural Design), ARCH 201 (Residential Studio), ARCH 203 (Residential Remodel Studio), ARCH 204 (Green Residential Studio), ARCH 224 (Active and Passive Building Systems) and ARCH 256 (Detail Drawing with Autocad).

As a second example of assessment-driven changes, we've focused on improvement in the following areas:

- 1. Communication with design professionals**, clients, and engineers, using industry specific terminology and graphics, per the **4th outcome** in the AAS in Architectural Design & Drafting degree: *Communicate with design professionals, clients, and engineers, using industry specific terminology and graphics.*

Nearly all our courses address graphic conventions and terminology. As an example, we added a new course, ARCH 210 (Professional Practice for Architecture), to improve students' chances at finding employment upon graduation.

- 2. Completion of all phases of the design and documentation process** with consideration of its impact on the natural world, per the **5th outcome** in the AAS in Architectural Design & Drafting degree: *Complete all phases of the design and documentation process with consideration of its impact on the natural environment.*

Many of our courses address the impact of architecture on the natural world, and vice versa. As an example, the ARCH 131 (Sustainable Building Strategies) course was revised in the Spring of 2017 to broaden an understanding of the natural and manmade systems that influence design worldwide. Think the Netherlands and climate resiliency, Sweden and waste reduction, and Western Europe and

population density. This has opened minds to a world beyond Oregon and US borders and exposed our students to international perspectives.

Most importantly, we have the right people speaking to these topics in the classroom, in the form of a faculty with solid green credentials and international experience.

**B. Addressing College Core Outcomes**

*i. Update the Core Outcomes Mapping Matrix.*

<http://www.pcc.edu/resources/academic/core-outcomes/mapping-index.html>

*For each course, choose the appropriate Mapping Level Indicator (0-4) to match faculty expectations for the Core Outcome for passing students.*

		CO1	CO2	CO3	CO4	CO5	CO6
ARCH 100	Graphic Communication for Designers	3	0	4	1	3	3
ARCH 101	Introduction to Residential Design	3	3	4	3	4	3
ARCH 110	Introduction to Architectural Drawing	2	1	3	1	2	1
ARCH 111	Intro to Residential CDs	3	3	3	1	3	1
ARCH 112	Intro to Commercial CDs	3	2	3	1	3	1
ARCH 113	Site Planning	3	4	4	2	4	1
ARCH 121	Structural Systems I	1	1	3	0	0	1
ARCH 122	Structural Systems II	1	1	3	0	0	1
ARCH 123	Structural Systems III	1	1	3	0	0	1
ARCH 124	Introduction to Building Systems	2	3	3	1	2	2
ARCH 126	Introduction to Autocad	2	0	2	0	2	2
ARCH 131	Sustainable Building Strategies	3	4	4	4	3	3
ARCH 132	Residential Building Codes	1	2	3	1	2	2
ARCH 133	Commercial Building Codes	1	2	3	1	2	2
ARCH 134	Energy Conservation Codes	1	3	3	1	2	2
ARCH 136	Intermediate Autocad	2	0	2	0	3	2
ARCH 161	Residential Print Reading	3	2	3	0	3	1
ARCH 162	Commercial Print Reading	3	2	3	0	3	1
ARCH 200	Principles of Architectural Design	3	3	3	3	3	2
ARCH 201	Residential Studio	3	3	4	2	4	2
ARCH 202	Commercial Studio	3	2	4	2	4	2
ARCH 203	Residential Renovation Studio	3	2	4	2	4	2
ARCH 204	Green Residential Studio	4	4	4	2	4	3
ARCH 210	Professional Practice for Architecture	2	2	3	2	4	3
ARCH 224	Active and Passive Building Systems	3	4	4	2	3	2
ARCH 237	Introduction to Revit Architecture	2	1	3	0	3	1
ARCH 247	Intermediate Revit Architecture	2	1	3	0	3	1
ARCH 256	Detail Drawing with Autocad	1	3	2	2	4	1
ARCH 280	Cooperative Education: Architecture	3	2	2	1	3	2

C. Assessment of Core Outcomes (LDC) or Degree and Certificate (CTE) Outcomes.

- i. *Reflecting on the last five years of assessment, provide a brief summary of one or two of your best assessment projects, highlighting efforts made to improve students' attainment of the Core Outcomes (LDC-DE disciplines) or Degree and Certificate Outcomes (CTE programs). (If including any summary data in the report or an appendix, be sure to redact all student identifiers.)*

**The department received an award for Exemplary Assessment from PCC's Learning Assessment Council** for the 2013-14 Assessment Report at the Fall 2014 In-Service on September 15, 2014. This award was in recognition of the Annual and Multi-Year Assessment Plans submitted on January 16, 2014.

**We complete the Department's annual TSA (Technical Assessment) paperwork** and submit it to the Learning Assessment office as an annual report, as well as to the state of Oregon. This work documents that we are teaching students the things we need to be teaching them, and that they are well equipped to pursue employment upon graduation.

The feedback we received on the TSA from Tom Thompson, CTE contact for the Oregon Department of Education in Salem, per e-mail on July 26, 2013, was as follows: *"...what you sent to me is something I don't often see. With your permission, I would like to keep this information as an example of how a college might use assessment data to improve a program."*

Both of the above reflect feedback on our typical assessment projects: we collect a complete drawing set from each student for whom the course (Fall ARCH 201 or Spring 203) is their final studio. These students are near-graduates and are already applying for, and finding, work in the field. Performance benchmarks are addressed through a scoring worksheet that measures ability and consistency across each student's drawing set and in individual categories (site plans, floor plans, framing/foundation plans, elevations, sections/details, overall consistency and neatness). The maximum score of each individual student assessment is 80, across 15 sub-categories. A passing score entails 60+.

- ii. *Do you have evidence that the changes made were effective by having reassessed the same outcome? If so, please describe briefly.*

The most recent reassessment cycles have not in themselves spurred any dramatic or immediate changes in instruction or curricula: they rather tend to reinforce that our instruction, and assessment thereof, work. But the courses are in a constant state of revision as we keep up with the latest in technology and software, and we made large-scale changes in 2016 to the Fall Capstone studio (ARCH 201) to better reflect the Portland housing market. Since both the ARCH 201 and 203 are studios, the students become full-fledged designers; as such, they are encouraged to follow their passions, and become highly aware of current best practices of design and construction. The best evidence we can offer that these changes have worked is in the high percentage of our students finding good jobs upon graduation.

*iii. Evaluate your SAC's assessment cycle processes. What have you learned to improve your assessment practices and strategies?*

**The key thing that improves our assessment practices and strategies is a keen awareness of the skill sets the Portland employment market demands, and constantly calibrating our instruction with that in mind.** Assessing the results of those efforts in the form of reviewing and evaluating student work happens weekly or even daily, really: so while we do a formal assessment only annually per college protocol, we get a near-constant read on how we're doing. We have fruitful, even extensive, collaboration among our faculty members, and regularly align our courses to optimize sequencing and maximize learning.

As for the specifics of the 'official' assessment process, as a small CTE program, it often seems that all the SAC work falls upon one person. When we have SAC meetings on In-Service days and in department meetings, other faculty members attend and respect the role the SAC plays, but beyond that, there is little follow-through with the things we discuss those days. The SAC Chair has asked for input from adjuncts many times on the sorts of things they've revised or updated in their courses, and rarely hears anything back. In end effect, the SAC in this small department becomes a de facto one-person committee.

A silver lining to that is we have recently hired a new full-time person for the department (our first such hire since 2010), and she has been able to add energy and perspective.

Peter Gramlich acted as a Peer Reviewer of CTE programs for the Learning Assessment Council in the summer of 2015 and 2016, which entails reviewing summary data reports, assessments and reassessments of specific CTE programs. He was an LAC Coach for the 2016-17 and 2017-18 assessment cycles.

*iv. Are there any Core Outcomes that are particularly challenging for your (LDC-DE) SAC to assess, or difficult to align and assess within your (CTE) program? If yes, please identify which ones and the challenges that exist.*

**The College Core Outcome that might be hardest to measure in our program is self-reflection:** assess, examine and reflect on one's own academic skill, professional competence and personal beliefs and how these impact others.

We're heavy on more tangible outcomes: professional competence, communication and cultural and environmental responsibility all rank highly among the outcomes we provide.

That said, we try to address self-reflection in the form of including regular 'public' project reviews and critiques. Students gain feedback from instructors, classmates and professionals, and in the process continuously analyze their own workflows and skills, and gain an understanding of their own strengths and weaknesses. This enables them to seek strategies for improvement to move forward.

- v. *CTE only: Briefly describe the evidence you have, determined by direct assessment, that students are meeting your Degree and/or Certificate outcomes.*

**Our typical assessment seeks to provide a multitude of outcomes; the following 2 (of 6) degree outcomes are probably the most pertinent**, since they comprise what's reflected in students' portfolios as they seek employment upon (and prior to) graduation.

- AAS in Architectural Drafting & Design Core Outcome Number 2:  
*Produce architectural drawings using a range of computer-aided drafting software.*
- AAS in Architectural Drafting & Design Core Outcome Number 3:  
*Select and recommend building systems, structural systems, construction materials, and structural components responsive to the building's design.*

Upon successful completion of the ARCH 201 and 203 studios, the courses used for assessment, students are able to apply design development strategies to a new multi-family dwelling/duplex and remodel design, and create a set of construction documents including structural analysis and design of structural systems for a new single-family residence/duplex and remodel design. These are the most tangible and marketable skills we can offer and directly reflect the above two outcomes.

It is our goal to focus these assessments on those who are about to enter the workforce; we feel this provides an insight into the most pertinent question we can pose, namely 'how well are we preparing our people for finding, and succeeding at, work?'

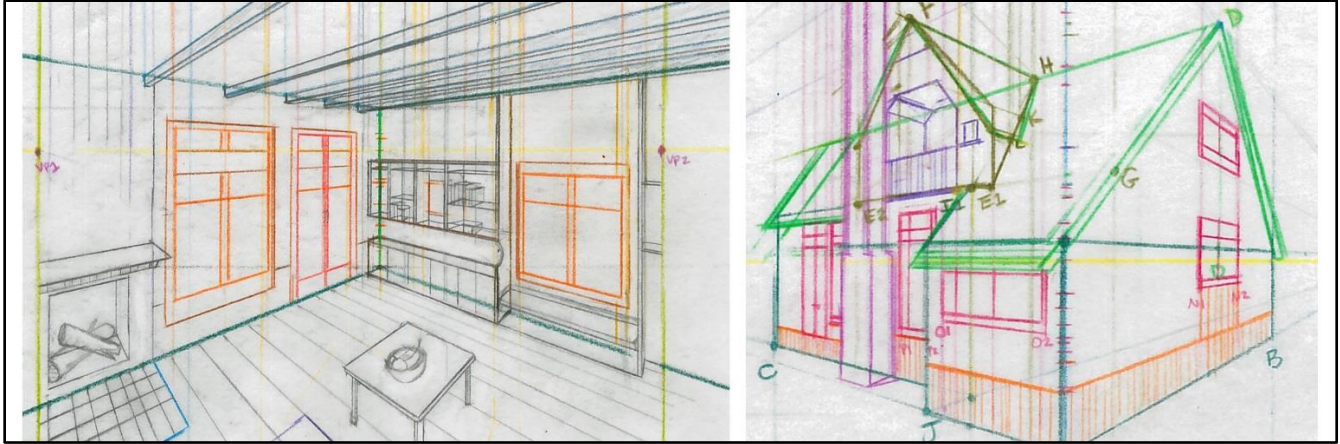
**Virtually all of our recent graduates have found employment upon completion of the program, as we are confident in their skills and the job market is humming.**

*"I entered the Drafting program at PCC with the goal of gaining practical skills and further knowledge within a field I thought would fit my interests and background. With each class I took at PCC, I became more enthralled with learning how buildings work and are put together, and I realized that the field of architecture and design is definitely the direction I want to go in".*

*2016-17 Architectural Design/Drafting student and transfer into the University of British Columbia's M. Arch. program*

*"One of the most valuable things to me about the program was that we were learning from passionate professionals who were mostly still active in their careers outside of education; they had real-time information on what was going on in the Architecture and Interior Design fields, and incorporated that into their teaching. The strong focus on a foundation of hand-drafting and professional development skills, and building on that with computer drafting and designing concepts for actual clients, was instrumental in really preparing me for a job in this field."*

*2016 Architectural Design/Drafting graduate*



### 3. Other Instructional Issues.

- A. Please review the data for course enrollments in your subject area. Are enrollments similar to college FTE trends in general, or are they increasing or decreasing at a faster rate? What (if any) factors within control of your SAC may be influencing enrollments in your courses? What (if any) factors within control of the college may be influencing enrollments in your courses?

Program Review Data Profiles  
Collegewide and Campus FTE and Headcount by Subject  
Institutional Effectiveness Office, 2018-19 Program Profiles 5 Year Trend

Subject: Architectural Design & Draft-ARCH

FTE Totals by Subject Area and Percent Difference from Previous Year

Campus	2013-14		2014-15		Year 2015-16		2016-17		2017-18	
	FTE	Percent Change	FTE	Percent Change	FTE	Percent Change	FTE	Percent Change	FTE	Percent Change
Collegewide	145.5	-13.3%	134.1	-7.8%	139.5	4.0%	144.1	3.3%	156.8	8.8%
RockCreek	5.6	-5.3%	6.8	21.8%	4.4	-35.0%	3.7	-15.7%	4.6	23.2%
Sylvania	139.9	-13.6%	127.4	-9.0%	135.1	6.0%	140.4	4.0%	152.2	8.4%

Headcount Totals by Subject Area and Percent Difference from Previous Year

Campus	2013-14		2014-15		Year 2015-16		2016-17		2017-18	
	Headcount	Percent Change	Headcount	Percent Change	Headcount	Percent Change	Headcount	Percent Change	Headcount	Percent Change
Collegewide	680.0	-11.8%	649.0	-4.6%	622.0	-4.2%	629.0	1.1%	662.0	5.2%
RockCreek	59.0	-3.3%	75.0	27.1%	51.0	-32.0%	43.0	-15.7%	53.0	23.3%
Sylvania	642.0	-12.3%	612.0	-4.7%	588.0	-3.9%	596.0	1.4%	621.0	4.2%

Per information provided by PCC's [Office of Institutional Effectiveness](#), a brief summary of our student demographics is as follows:

<b>2013-14</b>	145.5 FTE;	680 head count;	
<b>2014-15</b>	134.1 FTE;	649 head count;	(a <b>4.6% decrease</b> from 13-14)
<b>2015-16</b>	139.5 FTE;	622 head count;	(a <b>4.2% decrease</b> from 14-15)
<b>2016-17</b>	144.1 FTE;	629 head count;	(a <b>1.4% increase</b> from 15-16)
<b>2017-18</b>	156.8 FTE;	662 head count;	(a <b>5.2% increase</b> from 16-17)

- The **previous big enrollment surge came in 2009-10**; this coincided with the height (valley!) of the recession.
- Since then, we've seen a **return to greater consistency** in enrollment broadly, and a recent spike in enrollment specifically. As we noted in our last Program Review in December of 2013, a larger drop in 2012-13 was probably impacted by some new college policies: deletion for non-payment and stricter drop deadlines. While these may have impacted overall enrollment in a negative way, they helped the program by introducing higher standards and efficiencies.
- Of course, **we added a new program in Building Inspection Technology (INSP)** in winter term 2016, and that has also contributed to a boom in classes and students in our department. Here are the numbers from that program:

Program Review Data Profiles  
Collegewide and Campus FTE and Headcount by Subject  
Institutional Effectiveness Office, 2018-19 Program Profiles 5 Year Trend

Subject: Building Inspection Tech-INSP

FTE Totals by Subject Area and Percent Difference from Previous Year

Campus	Year							
	2013-14		2015-16		2016-17		2017-18	
	FTE	Percent Change	FTE	Percent Change	FTE	Percent Change	FTE	Percent Change
Collegewide	1.01	-9.0%	1.64	62.4%	12.06	635.4%	15.25	26.5%
Sylvania	1.01	-9.0%	1.64	62.4%	12.06	635.4%	15.25	26.5%

Headcount Totals by Subject Area and Percent Difference from Previous Year

Campus	Year							
	2013-14		2015-16		2016-17		2017-18	
	Headcount	Percent Change	Headcount	Percent Change	Headcount	Percent Change	Headcount	Percent Change
Collegewide	2.00	-50.0%	17.00	750.0%	37.00	117.6%	49.00	32.4%
Sylvania	2.00	-50.0%	17.00	750.0%	37.00	117.6%	49.00	32.4%

- **We tend to attribute the current surge in our enrollment to the hot-again Portland job market for architecture, design and construction.** Anyone who's seen the construction cranes that punctuate our skyline or shared in the sense that Portland's increasingly become a 'place to be' and cluster of technology can testify to that. **We know that the tangible skills we offer our students** (which can essentially be boiled down to 2 things: a knowledge of how to build, and the ability to draw it) are highly sought after by architecture and engineering firms.

For more specific enrollment data, see Section 4A, Needs of Students and the Community, below.

- B. Please review the grades awarded for the courses in your program. What patterns or trends do you see? Are there any courses with consistently lower pass rates than others? Why do you think this is the case, and how is your SAC addressing this?*

Per information provided by PCC's [Office of Institutional Effectiveness](#), we see a grade distribution from the low 70s to the high 90% in the earned-credit (A/B/C/P) range.

Patterns and trends that we see:

- **Course success rates tend to climb in the second year**, though those classes are typically more intense. This is because those who have progressed to that point are invariably committed, and have learned what it takes to succeed in the classroom.
- **The software-format courses (Autocad and Revit) see an increased success rate as students move along the sequence.** Intro to Autocad (ARCH 126) sees a 75-88% earned-credit rate (A/B/C/P); Intermediate Autocad (ARCH 136) sees a jump to 82-93%, and Intro to Residential CDs (ARCH 111) has been at a 91-96% success rate over the past 5 years.
- **The lecture-based courses (Building Systems, Site Planning, Building Codes) seem to hold steady at an 80-85% earned-credit rate (A/B/C/P)**, though the Site Planning class comes in above that, at a 92-100% success rate over the past 5 years, even though it's seen as one of the most intense of the program. We attribute that to its importance in the prerequisite chain; it's the gateway to the 200-level studio courses.
- **The Structures courses have a higher success rate as students move through the sequence.** Structures I (ARCH 121) sees an 82-93% earned-credit rate (A/B/C/P); Structures II (ARCH 122) sees a jump to 93-100%, and Structures III (ARCH 123) has been at 100% success rate over the past 5 years.
- **A course that's commonly among our 'toughest' is ARCH 110 (Intro to Architectural Drawing)**, with a range of 75% earned-credit rate over the past 5 years; this is because it's an intensive first-quarter studio class, and some probably decide architecture isn't for them.
- **Another important course is ARCH 200 (Principles of Architectural Design)**, which students typically take fairly early on as part of the Residential Degree option. This course earned-credit rate has come in at 78-89% over the past 5 years, which is probably an accurate reflection on the percentage of students finding architecture to be something they're interested in long-term.

- C. *Which of your courses are offered online and what is the proportion of on-campus and online? For courses offered both via DL and on campus, are there differences in student success? If yes, describe the differences and how your SAC is addressing them.*

Courses that we offer online:

- **The building codes courses: ARCH 132 and 133**, Residential and Commercial Codes, respectively. The proportion of on-campus to online is 3:1 for ARCH 132, where it's taught fully in-person each fall and fully online the other 3 terms. Student success rates overall are very much in line with what we see in our other courses, with a range from the mid-70s to high 90s of students earning an A/B/C/P grade.

ARCH 133 is traditionally online: the last time we had an optional online/in-person version was fall of 2014: in that instance, 5 students opted for the in person version and the other 17 chose online. The 5 in-person folks were, as might be expected, all go-getters. Faculty member Denise Roy is running a similar optional in-person section this fall of 2018.

It should be noted that the third course in this series, ARCH 134 (Energy Conservation Codes), is taught only in person, by Adjunct Scott Caufield.

- **The print reading courses: ARCH 161 and 162**, Residential and Commercial Print Reading, respectively. These courses are fully online. Student success rates overall are in line with what we see in our other courses, with a range of 76.3 to 86.5 of students earning an A/B/C/P grade over the past 5 years for ARCH 161, and 83.7 to 91.8 over the past 5 years for ARCH 162.
- **ARCH 121 (Structural Systems I) and ARCH 124 (Intro to Building Systems) were made into hybrid on-campus/online courses** in the fall of 2017, also in the interest of broadening opportunities for our students. Enrollment increased that year from 64 to 99 in ARCH 121 and from 98 to 129 in ARCH 124. We will see how this works for students. For the current fall 2018 term, faculty member Denise Roy set the hybrid version of the ARCH 124 class to meet for 2 evening hours, instead of the usual 3, which allows for an ARCH 121 to follow immediately after as a 'package' of sorts.
- **As far as format, our online classes are well suited to a proctored self-study format, outlined as follows:**
  - o Read a lecture or a chapter in a book
  - o Look up some items or look at a drawing
  - o Take a quiz to see if you understand the concepts for the week
  - o Write a discussion post relating to that week's topic for practice with written responses and professional communication etiquette, and to help create a sense of community among the students
- **For ARCH 132 (Residential Codes)**, faculty member Rebeca Cotera now teaches both the in-person fall section and an online winter section. Her experience from having taught one in-person and one on-line section of 132 is that some students will definitely benefit from the guidance of an in-person course while others might feel like they prefer to figure things out on their own. There were no performance differences between on-line and in-person in terms of distribution of final grades.

Adjunct instructor Michelle Mueller has also and frequently taught both the in-person and online ARCH 132. She's found the in-person section students to be somewhat more fragile and requiring reassurance. The same amount of course materials is taught in each section. There are weekly discussions in the online group, and some group projects to reinforce lecture materials in the in-person class.

**Students are advised of the benefits and challenges of online classes by their advisors and faculty members.** We make it very clear to students who choose online classes that there is actually more work involved and that they will need to have a lot of self-discipline. The online courses definitely do not work for all students. Students are also required to complete the PCC orientation for online classes. Some students prefer not to take online classes; however, sometimes they are not offered any other way.

- **To summarize: those classes of ours that are online are very well-suited for online study.** The results of the student evaluations are always quite high for ARCH 161 and 162, the fully online courses. They are slightly lower for the ARCH 132 and 133 (the codes courses), perhaps due to the requirements that students search through both zoning and building codes; some folks can find this difficult and/or confusing.

*D. Has the SAC made any curricular changes as a result of exploring/adopting educational initiatives (e.g., Community-Based Learning, Internationalization of the Curriculum, Inquiry-Based Learning, etc.)? If so, please describe.*

Our faculty members have made curricular changes and adopted educational initiatives as outlined below:

- **Faculty member Peter Gramlich was awarded an NIEA (Northwest International Education Association) grant** toward the goal of internationalizing college curricula in April of 2018. These grants award stipends to NW faculty members who revise and develop coursework that incorporates internationalization into curricula, lesson plans, assignments and projects. He chose the coming summer 2019 iteration of ARCH 131, Sustainable Building Strategies, as the course to which to apply these topics. Peter's proposal was one of 4 selected as [the first-ever PCC faculty members to receive this grant](#).
- **Peter completed 2 Machine Manufacturing courses during the Fall 2015 term:** MCH 291 (Laser Cutting) and MCH 292 (3D Printing). The point here was to...
- **...integrate laser cutting into Peter's twice-yearly ARCH 113 (Site Planning) classes starting in Spring 2016.** Students have since been required to build their site models using the laser cutters in the Maker Lab. Students learn how to convert files from Autocad and Revit into Illustrator and CorelDraw, which interface with the laser. These models have created much curiosity and excitement among the students and others: Congressman Earl Blumenauer toured the Maker Space with a PCC contingent in October 2014, and saw architecture students at work on their designs. And the physical models have a certain tangible aspect that can't be emulated in the virtual.
- As proof of the results we can achieve when we expand beyond traditional curricula, **three of our grads landed at the Portland office i-Ten Associates in early 2016**, where they use laser scanning, aerial mapping services and BIM. i-Ten's president has said our program is his first choice when looking for talent.

- **Peter took part in a STEM equity and inclusion process in June and July of 2017.** This grant project allotted 60 hours to develop and share coursework incorporating equity, diversity and inclusion into curricula, lesson plans, assignments and projects in the STEM fields. He divided his efforts into 4 areas: internationalization, science, equity and teamwork, and created and shared a variety of data and resources with the larger group.
- **Faculty member Denise Roy took a spring term 2018 sabbatical to create a book specific to the ARCH 124 (Intro to Building Systems) class,** with a 'regional' application for building science & appropriate applications. This book is free to our students, and not published outside of PCC. The idea is to provide our students a free and informative/regional book related to building systems. This has been accomplished- our student support specialist Arlene McCashew and instructional admin assistant Lois Jurhs are currently (in fall of 2018) putting the text and photos into Publisher format. This book is combined with Denise's first run of a hybrid version of ARCH 124. The format for this is a 'flipped classroom', where students read a chapter of the book each week, before class. During class, they have a short quiz on the reading, followed by small group work, applying the information to a 'practice house'. Then, for homework, each student has a different 'practice house' to which to apply their knowledge in a deeper fashion. Both these houses are schematic designs (plan and elevation) which Denise found online, and went on to create files with the scaled plans.
- **Adjunct faculty member Dorothy Payton uses the Pritzker Prize laureate list as candidates to explore the lives of well-known architects.** This is not only an international list of practitioners, it represents various cultural and belief systems, education and career paths. This wide variety of architects helps to raise numerous aspects of the profession and contributions to humanity.
- **Dorothy has been a member of the PCC China Cohort since 2010,** as one of 12 PCC faculty members, who are part of a consortium of 72 faculty nationwide working under the Title VI Grant for the Asian Studies Development Program, which is administered through the East West Center at the University of Hawaii. The group's goal is to introduce materials into the curriculum at the undergraduate level about China, leading to an enhanced sense of global citizenship and intercultural awareness.
- **Dorothy has developed course materials around China** for ARCH 200 (Principles of Architectural Design), incorporating Feng Shui, Tangram, a sketching field trip to Lan Su Yuan, and a focus on I.M. Pei and some of his work in China, France and Washington, D.C.. She has also introduced a Chinese client with specific Chinese activities and art collections into the ID Lighting Design course.
- **We've revised and updated the Sustainable Building Certificate.** Thanks to our faculty being able to embed sustainability into much of our curriculum, this has allowed us to shorten the certificate requirements.
- **We've expanded Distance Learning options** in our program and trained 2 new DL faculty.
- **In fall 2018, we are offering our first ARCH class at the Southeast campus.** This was initiated by the dean and chair of the CADD program at the SE campus. The course (ARCH 237) is required for our ARCH students, and is an elective for CADD students. We are coordinating with the CADD department to potentially have both our ARCH students and their CADD students sharing the computer labs at both campuses.

- **The department recently added a Blue Beam class (INSP 126)** as part of the Building Inspection degree program. Our commitment to this important drawing markup software began as a community based request/interest.
- **We've instituted a regularly open CAD lab for student use** and continue to provide new software and upgrades. We've brought on Bluebeam for Inspection students. We are struggling to provide open computer lab time for our students with our current class schedule.
- **We've created new courses and made a host of course revisions and upgrades.** We've added some Machine Technology options to our electives and dropped some others, based on industry input (i.e. SketchUp not required).

*E. Are there any courses in the program that are offered as Dual Credit at area high schools? If so, describe how the SAC develops and maintains relationships with the HS faculty in support of quality instruction.*

As noted on PCC's [website](#), students can earn PCC credits in Career & Technical Education courses, leading to an Associate's degree or certificate in programs. Ours is one of these. Many other PCC departments participate in this statewide effort, as do several other colleges.

Faculty member Peter Gramlich is the architecture department's liaison with high schools with whom we have articulations. He performs assessments and has provided high school teachers with examples of our student projects and shared our curricula. We've found that the best practice for developing relationships with high school faculty in our discipline is through direct engagement. Since so much of the learning is lab-based (and software-based, Autocad in particular), Peter has spent time getting to know the high school instructors and seeing how they and their students work. In the large-scale picture, the most productive channel has been the annual dual-credit symposium at Rock Creek, where he meets with all the high school instructors at once and hears their concerns and ideas.

We advise the high school faculty to have their students attend an on-campus info session; it's even better if high school counselors do too. For their part, the HS faculty members have asked us to share 'cool stuff', such as videos of physical models our students make, to help them excite their people. Perhaps the best-case scenario is to receive classes of high school students on campus, where we can walk them through our studios and labs in the interest of making things tangible. We haven't done enough of this.

*F. Please describe the use of Course Evaluations by your SAC. Have you created SAC-specific questions? Do you have a mechanism for sharing results of the SAC-specific questions among the members of your SAC? Has the information you have received been of use at the course/program/discipline level?*

Our faculty members haven't often used SAC-specific questions in course evaluations. However, faculty member **Denise Roy plans on adding one to the new hybrid version of the ARCH 124 (Intro to Building Systems) class**, asking for feedback on the 'style' of curriculum, ie students reading on their own and doing small group activities in class that replicate the work on homework projects.

*"I have to say, if it wasn't for the program here at PCC, I would have not been able to get anywhere close to getting this opportunity. Thank you for always being so helpful; I am so grateful for having you as my advisor."*

2016-17 Building Inspection student and Plans Examiner, City of Portland

*"Thank you for being such a great teacher/leader. You have a wonderful gift and I appreciate that you share it. Your classes were always a challenge, but offered amazing skills."*

2015 Architectural Design/Drafting graduate



#### 4. Needs of Students and the Community.

- A. *Have there been any changes in the demographics of the student populations you serve? If there have been changes, how have they impacted curriculum, instruction, or professional development, and, if so, in what way?*

**Age-related demographics have remained relatively constant** with changes of less than 5% across all age groups, as have gender demographics with only a slight (3%) increase in students reporting as female and a slight (5%) decrease in those reporting as male between 2013-14 to 2017-18.

**There has been a slight upward trend toward diversity in race demographics.** Students reporting as white decreased marginally (70% in 13/14 compared to 68% in 17/18).

**We have noticed an increase in International student populations whose first language is not English.** Current practice is that students are advised to complete ESOL and take WR 121 before beginning our classes, however, because these classes do not have prerequisites, students may enroll in our first term classes without having proficient skills in reading and writing English. This presents a challenge for students who may not have completed the ESOL program and move straight into our introductory classes. As a SAC, we are discussing this and are considering placing WR/RD 115 prerequisites on some of the more technical introductory classes.

Students struggling with language barriers don't always self-identify and it has been up to instructors to work on an individual basis with these students. They are also encouraged to seek out peers for support.

Additionally, we have encountered some frustration with international students over the international student orientation process. New international students must wait to register for classes and sometimes they are shut out of some of the introductory classes, as these fill quickly.

## Program Review Data Profiles Collegewide and Campus Demographics by Subject

Institutional Effectiveness 2018-19 Program Profiles 5 Year Trend

Subject

Architectural Design & Draft-ARCH

Campus

Collegewide

Race/Ethnicity	2013-14		2014-15		Year 2015-16		2016-17		2017-18	
	Headcounts	% of Total	Headcounts	% of Total	Headcounts	% of Total	Headcounts	% of Total	Headcounts	% of Total
Asian	35.0	5.1%	47.0	7.2%	52.0	8.4%	59.0	9.4%	49.0	7.4%
Black	20.0	2.9%	17.0	2.6%	17.0	2.7%	20.0	3.2%	14.0	2.1%
Hispanic	48.0	7.1%	46.0	7.1%	44.0	7.1%	49.0	7.8%	67.0	10.1%
Multi	34.0	5.0%	25.0	3.9%	34.0	5.5%	35.0	5.6%	34.0	5.1%
Native	7.0	1.0%	4.0	0.6%	5.0	0.8%	2.0	0.3%	2.0	0.3%
Pacific	1.0	0.1%	2.0	0.3%	1.0	0.2%	3.0	0.5%	5.0	0.8%
Unreported	56.0	8.2%	53.0	8.2%	43.0	6.9%	48.0	7.6%	40.0	6.0%
White	479.0	70.4%	455.0	70.1%	426.0	68.5%	413.0	65.7%	451.0	68.1%
Grand Total	680.0	100.0%	649.0	100.0%	622.0	100.0%	629.0	100.0%	662.0	100.0%

Our students span a wide age range, and are typically older than the average PCC student. **Over 65% of our 2017-18 students are 25+**; this has typically been the case in our program.

As seen in the above table, 68.1% of our students in 2017-18 are of white non-Hispanic origin, 10.1% are Hispanic, 7.4% are of Asian origin, 5.1% are multi-racial, and 2.1% are African-American. The percentage of non-white students has increased by 2.3% since 2013-14. The numbers generally reflect the (not very) diverse demographics seen in the Portland metro area.

Non-white students have the same, or a slightly higher, graduation rate than white students.

Most of our students have already attended college before beginning our program: **83% have done previous college coursework**. A high percentage of our students already have a college degree: 26% of respondents to a 2013 informal, internal survey had previously earned bachelor's and/or master's degrees.

**The majority of our students attend PCC part time** (11 credits or less), and work and/or parent outside of school.

This particular set of demographics creates, and mandates, a wide range of learning styles and interests, reflects a broad spectrum of abilities, and results in a variety of output, for which no one method of assessment is likely to suffice. So this variety of previous college background, work experience and socio-economic/cultural mix has greatly affected instruction methods in our courses. In non-studio format classes, instruction has been

augmented with inquiry-based learning where students learn directly from each other in small groups. Often, students who have industry work experience are uncertain in the classroom until they realize how much they can add to the group discussion. When managed right, this is a huge asset of the community college.

In addition, informal student learning communities take shape as students work together outside of class on projects and come to share experience and interests. This is supported by setting aside an open lab for work on class projects. Service learning is another tool that is used in various classes as a means to engage our diverse student body in a variety of opportunities outside the classroom.

- B.** *What strategies are used within the program/discipline to facilitate success for students with disabilities? If known, to what extent are your students utilizing the resources offered by Disability Services? What does the SAC see as particularly challenging in serving these students?*

**Faculty members work with Disability Services** in order to provide the richest possible learning experience for students. Typically, instructors communicate with Disability Services via e-mail or in person to find the best strategy for meeting student-requested accommodations.

Common issues that present challenges specific to the design program are learning disabilities such as dyslexia and dyscalculia, as the design industry requires detailed and precise measurements and an attention to detail when it comes to spelling and other errors. In addition, the Architecture program's emphasis on precision, high standards, and tight deadlines can also impact students with anxiety disorders and depression. Fortunately, PCC's office of Disability Services has been a great partner. They have provided students with coaching, academic accommodations, and other tools that aid the students in the classroom. In addition, they have offered to help guide faculty members toward creating a more inclusive classroom environment for students facing disabilities.

Typically, instructors work with counselors from Disability Services via e-mail or in person to find the best strategy for meeting student-requested accommodations. We extend student testing time for students and make course materials available in advance for those students who have DS accommodation requirements. We've had ASL interpreters in the classroom as requested by the Office of Disability Services. Recent updates to our DL courses have included accessibility-required changes.

While not directly an example of working with Disability Services, it is worth mentioning that much of our coursework includes exposure to accessible and universal design. Students are taught ADA-based code requirements, and of best practices in residential and commercial architecture, where proper design commonly aspires to be universal, accessible or at least 'adaptable'.

- C.** *What strategies are used within the program/discipline to facilitate success for online students? What does the SAC see as particularly challenging in serving online students?*

Beyond the advising online students receive, as outlined in section 3C above, Adjunct instructor Michelle Mueller has frequently taught both the in-person and online ARCH 132 (Residential Building Codes). She's found the in-person section students to be somewhat more fragile and requiring reassurance. The same amount of course materials is taught in each section. There are weekly discussions in the online group, and some group projects to reinforce lecture materials in the in-person class.

Faculty member Rebeca Cotera now teaches both the in-person fall section and an online winter section of ARCH 132. Her experience from having taught one in-person and one on-line section of 132 is that some students will definitely benefit from the guidance of an in-person course while others might feel like they prefer to figure things out on their own. There were no performance differences between on-line and in-person in terms of distribution of final grades.

The ARCH 133 (Commercial Codes) class can be a bit tricky for some of our online people, so **we now plan to cross-list the online version with an in-person, once-weekly class**. Those who want to be in the classroom can sign up for that format, and all of the online students can drop into the in-person one whenever they want to ask questions, or get some extra practice applications.

**To summarize: those classes of ours that are online are very well-suited for online study.** The results of the student evaluations are always quite high for ARCH 161 and 162, the fully online courses. They are slightly lower for the ARCH 132 and 133 (the codes courses), perhaps due to the requirements that students search through both zoning and building codes; some folks can find this difficult and/or confusing.

- D. Has feedback from students, community groups, transfer institutions, business, industry or government been used to make curriculum or instructional changes (if this has not been addressed elsewhere in this document)? If so, describe.*

Student feedback, both 'official' through end-of-term evaluations and unofficial through dialogue and discourse, continues to shape teaching methodology.

**We are constantly reflecting market trends:** modern software tools currently being used in industry have been integrated into, and in some cases even generated, new courses. Some of these have been mentioned elsewhere in this report. One or two may be worth repeating here:

- The department recently added a Blue Beam class (INSP 126) as part of the Building Inspection degree program: this important new drawing markup software is the way our graduates will be doing business in the future.
- The ARCH 113 (Site Planning) class requires students to use the laser cutters in PCC's Maker Lab to build site models. This is a direct reflection of the direction in which model-building has gone over the past few years: the real skill set isn't in cutting chipboard with X-Acto knives (as was the case when current faculty members were students), but in learning the language of software programs, filetypes and user/tool interface to make a precise product.

New energy modeling tools to analyze energy efficiency in homes have been implemented into building systems courses.



**5. Faculty: reflect on the composition, qualifications and development of the faculty**

- A.** *Provide information on how the faculty instructional practices reflect the strategic intentions for diversity, equity and inclusion in PCC's Strategic Plan, [Theme 5](#). What has the SAC done to further your faculty's inter-cultural competence and creation of a shared understanding about diversity, equity, and inclusion?*

**As stated in Theme 5 of PCC's Strategic Plan, ...In order to succeed as a college and enable student success, PCC must proactively address institutional inequities and provide a high level of welcome and support to students, faculty and staff of all backgrounds, both locally and globally.**

The Architectural Design & Drafting Program has three full-time faculty members; **Denise Roy** is the Department Chair with an instructional load of 0.50 and a release of 0.25. **Peter Gramlich** is a full-time faculty member with an instructional load of 1.0, and has been the SAC Chair for the past 7 years.

**We welcomed a new full-time faculty member, Rebeca Cotera**, in the fall of 2017, after she had spent 8 years as an adjunct in the department. This was our first new full-time hire since the fall of 2010.

**We said goodbye to long-time faculty member and co-Chair Elizabeth Metcalf**, who retired on January 1, 2016.

We have 8 current adjunct faculty members teaching ARCH classes: **Kelcey Beardsley, Scott Caufield, Jon DeLeonardo, Emily Greene, Nancy Hiss, Michelle Mueller, Dorothy Payton** and **Severin Villiger**. **Instructor Support Tech Peter Harrison** (ARCH 110) and **CAD Learning Skills Specialist Keri Salim** (ARCH 237) also teach ARCH courses. As our curriculum encompasses a range of highly technical skills, including CAD, building codes and engineering, the expertise of our adjunct faculty provides the requisite teaching breadth and depth to our program. Most adjunct faculty members ply their trades and talents and have other professional employment.

**Our Inspection adjuncts include Bob Gilmore** (Building Official for Lake Oswego), **Jeff Kennedy** (Building Official for the City of Independence, OR) and **Joe Disciascio** (Residential Inspection Supervisor for the City of Portland).

**Our Residential-option degree students take courses taught by Interior Design faculty members.** They are Amanda Davis, Interior Design Chair and full-time faculty, and adjunct faculty members Ellen Cusick, Robin Fisher, Michelle Mueller, Dorothy Payton, Kendra Shippy, John Thompson and Alex Vins.

**Our faculty is relatively gender-balanced, at 8 women and 5 men. We have two faculty members raised in Europe (Peter G, Severin) and one in Mexico (Rebeca),** and most have a good amount of design and construction experience abroad and in other regions of the US, bringing some necessary cultural diversity to our program. As outlined in Section 3D of this report, we bring a good deal of internationalization to our classes, and celebrate our students' diversity through intentionally global-oriented lesson plans and curricula.

**All of our faculty members not only value equity, diversity and inclusion, but incorporate such into their daily interactions with students, each other and the wider community.** It isn't possible to omit broader community issues in discussions on urban planning, housing and design, and we find our students tend to reflect wider trends of the Portland area and value the same things we do.

Faculty member Peter Gramlich was elected to the Bend, Oregon, City Council on a platform of social justice in 2007. He has found the experience of working in local government invaluable in strengthening the links between opportunity and education.

**The faculty reflects student diversity and interests in that we generally echo the makeup of our students.** The ratio of women in the program in 2017-18 is 48.5% (compared with 47.1% male and 4.4% unreported; women outnumbered men for the first time in 2017-18) and it surely helps these students when they see a good portion of their courses being taught by women.

As first referenced above in Section 4A, 52.0% of our students are in the 25-49 age group, and another 13.2% are 50+. Representation of a wide range of ages lends our classes a palpable diversity of experience and enriches discussions and learning. As one who went to a university system straight out of high school, the author of this report found that sort of age diversity noticeably absent in the classroom, and felt it detracted from the college experience in general.

*B. Report any changes the SAC has made to instructor qualifications since the last review and the reason for the changes.*

The minimum qualifications for Instructor positions in the Department of Architectural Design & Drafting are as follows:

- Bachelor of Architecture degree and four years recent technical experience in residential/light commercial design is required, or:
- Demonstrated competence is determined on a course-by-course basis. For each course, instructor must have the requisite body of knowledge (via transcripts or formal presentation to committee), and possess five years of professional experience in the area.

Those courses that focus on commercial and mixed-use design content (in particular, ARCH 112 and ARCH 202) require that instructors have a professional architecture degree and experience related to commercial projects.

All of our faculty members have professional degrees in architecture (B. Arch. or M. Arch.) from accredited institutions, and many years of professional experience, as well as extensive teaching experience.

These qualifications were last updated in January 2010.

- C. *How have professional development activities of the faculty contributed to the strength of the program/discipline? If such activities have resulted in instructional or curricular changes, please describe.*

Professional development activities of our faculty typically occur in three areas: building codes, CAD/software and sustainable design. Faculty participation in conferences, workshops and internships has and continues to impact a variety of instructional and curricular changes.

Following is a summary of the instructional and curricular changes impacted by our faculty's ongoing professional development activities.

- Faculty members attend frequent training in CAD updates and new software releases.  
*Content changes include ongoing updates to Autocad-based courses ARCH 111, 112, 126, 136 and 256; to SketchUp course ARCH 127, to Revit courses ARCH 237 and 247, as well as all the studios and courses with lab components that employ these software programs.*
- Faculty attendance at industry seminars and workshops has resulted in implementation of new energy modeling tools to analyze energy efficiency in homes.  
*Content changes include introduction to energy modeling tools in ARCH 124, 127, 204 and 224.*
- Faculty training and participation in industry internships has resulted in updated curricula in response to emerging industry practices.  
*Content changes related to sustainable practices have gone into effect in ARCH 101, 113, 124, 131, 204 and 224. Content changes in ARCH 111 and 112 related to 'best practices' and energy efficient detailing in buildings carry over into the studio courses: ARCH 201, 202 and 203.*
- Faculty members attend annual training in response to building code updates and changes.  
*Content changes in ARCH 201, 202 and 203 reflect updates in seismic design requirements in new building codes. The most recent version of the ORSC (Oregon Residential Specialty Code) is 2017; this is the current Code we teach.*

*"The growth I've experienced in my skills through your teaching and perspective class has positively impacted every aspect of my work at school and beyond."*

*2015 Interior Design graduate*

*"In one word, amazing!...this program exposes you to a wide and deep pool of architecture knowledge & techniques. The instructors and staff are knowledgeable, supportive and available; this is the best architectural education for the cost. If you're looking to get into the field of architecture, this is the best program to establish a solid foundation for your career."*

*2017 Architectural Design/Drafting graduate*



We have 8 Canon Image Pro-Graf 36" color plotters, 5 Hewlett Packard 11x17 workgroup laser printers, a Ricoh 11x17 color workgroup laser printer, a Hewlett Packard color 11x17 Inkjet printer, a Xerox 11x17 workgroup copy machine, a Xerox 36" large format copy machine, an Epson 11x17 color scanner and a 24" Seal dry mount press available for the students. There are 48 manual drafting stations with Mayline Parallel rules and tilting tops and an additional 20 portable drafting boards. The department provides an assortment of architectural based lab tools and supplies ranging from a light table, wall construction samples, lighting box, scales, triangles, dividers, parallel rules, tape dispensers, stapler, paper cutters, etc.

**B.** Describe how students are using the library or other outside-the-classroom information resources (e.g., computer labs, tutoring, Student Learning Center). If courses are offered online, do students have online access to the same resources?

Student use of the library remains low, as most of the information needed for coursework is found on websites and in course reference materials. We integrate library resources and tours into our Intro to Architecture class to ensure that our students have some exposure to these resources. Tony Greiner of Library and Media Resources has stopped by past department meetings to offer instructional support, and various instructors use media services to enrich their classrooms. Our students generally do not use the library computers for classwork because they are not capable of running our primary software programs of Autocad and Revit. **Students have access to regularly scheduled open lab hours**, with a half time CAD tutor and a casual Structures tutor. They also have the benefit of working with their peers in the lab and are encouraged to do as much of their work as possible there.

**As detailed above in Section 3D, students use the Maker Lab** in their ARCH 113 (Site Planning) class. **Students are advised to use the SLC and Multicultural Center**, as well as the writing center for lower division collegiate coursework.

**Online students have access to the lab and a student lab** assistant during lab hours, which is also open on the weekends.

In the spring of 2016, a group of design students (Architecture, Interior Design and Landscape Design) entered and won a competition to design the new Columbia County Rider transit station in the city of Rainier, OR. The students won \$500 and their design was used as the basis for construction of the new transit station.

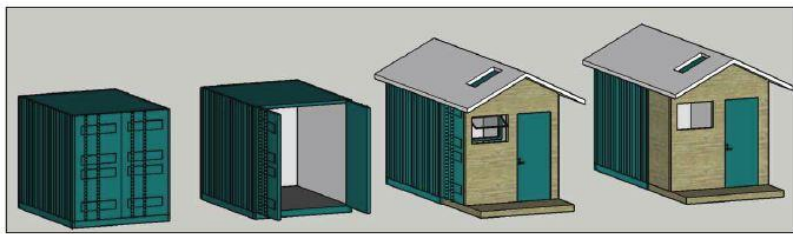


Recently, the Architecture students collaborated with the Interior Design department to form an ARCH and ID student club. This club networks at various design showrooms and community events, and enters local and national design competitions.

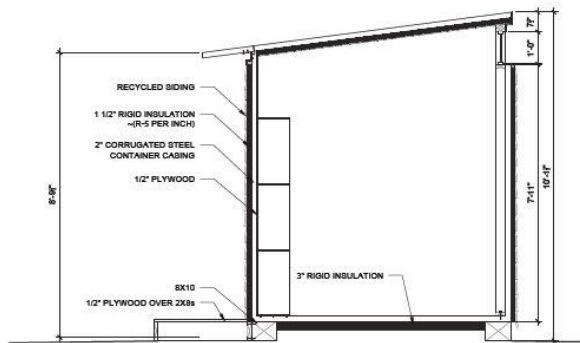
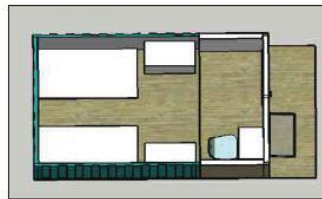
We are constantly looking for ways for students to emulate the kind of collaboration that occurs in the industry here at school, and with projects specific to the Portland metro. One of these is the very real problem of homelessness. This is an opportunity for students to create socially responsible design, and in so doing move past the traditional bounds of architecture.

In the ARCH 131 (Sustainable Building Strategies) class, we ask students pursuing the Certificate in Sustainable Building to address the problem of homelessness on a site in inner SE Portland. In teams of 3, they design a structure that can efficiently house 2 people. It may be permanent, ie built with a foundation and anchored to its site; or temporary and mobile, similar to disaster-relief housing.

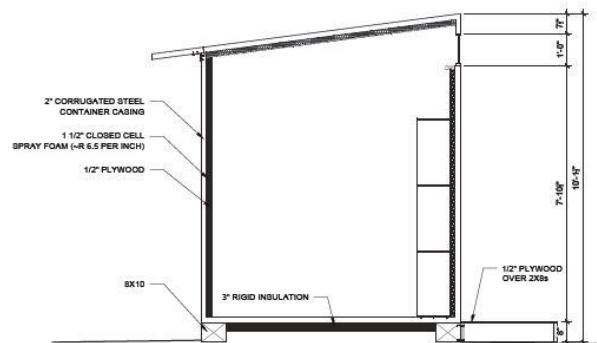
**Students consider:** what are the needs of a houseless person? Which of these needs can you address through temporary/mobile housing? Where's the line between public and private? Between temporary and permanent housing? Between fixed and mobile? Below is a recent design response.



BRIGHT AND CHEERFUL, THESE PODS WILL FIT RIGHT IN WITH THE SURROUNDINGS AND BE PART OF THE URBAN ART IN THE NEIGHBORHOOD. INTERMEDIATE SPACES ALLOW OCCUPANTS TO BE OUTSIDE IN SPITE OF OUR WONDERFULLY ABUNDANT RAIN.



1 VERSION #1 SECTION W/RIGID INSULATION  
Scale: 1/2" = 1'-0"



2 VERSION #2 SECTION W/SPRAY FOAM  
Scale: 1/2" = 1'-0"

- C. *Does the SAC have any insights on how students are using Academic Advising, Counseling, Student Leadership, and Student Resource Centers (e.g., the Veterans, Women’s, Multicultural, and Queer Centers)? What opportunities do you see to promote student success by collaborating with these services?*

**The Architectural Design students have access to a Perkins funded advisor, Arlene McCashew.** Students are supported in academic planning and goal setting, learning effective study skills, time management, navigating PCC and Financial Aid policy and procedures, facilitating communication between faculty and student; as well as student engagement and resource referral, all on a regular basis.

Referrals to additional resources are made at advising appointments, or as assessed by faculty in the classroom. **We work closely with the Counseling office, Disability Services and the various Resource Centers,** to ensure that students get the resources they need to be successful, and engage in their own educational process early on in the program. Utilization of these resources has been invaluable, particularly with new students and students who struggle during the first or second terms of the program. Students are less likely to require additional resources as they progress to second year.

**Last year, we implemented mandatory advising.** Architecture students are required to meet with the program advisor and submit an academic plan (for a grade) in ARCH 124 (a first or second term class) and ARCH 101 (a second or third term class). We found that when this assignment was not given in class (where it’s presented as mandatory), only about 50% of students sought out academic advising in their first two terms, as opposed to 100% with the class assignment. We also strongly encourage all second year students to meet with their advisor during their first term of second year and are working to make this advising mandatory.

**Students are encouraged to engage in student leadership and at the various student centers.** Currently our Architecture students are taking on roles in the Women’s Resource Center, Queer Resource Center, Men of Color program, and through work study in our faculty offices, CAD labs and Maker Lab.

*“PCC changed my life! Going back to school for my “dream career” while working full time all paid off! PCC totally helped me get my first job with a great Architecture firm! With that experience I was able to land my current position as Product Design Manager, designing custom architectural wood products for old home remodels and large commercial building renovations! Always different, always interesting!”*

*2013 Architectural Design/Drafting graduate*

*“I have many clients who come from the construction background and we are so glad this program is available as it really is a great career to transition into for those with construction backgrounds- and the job market outlook is really positive, too!”*

*Vocational Rehabilitation Counselor, 2018*



**7. Career and Technical Education (CTE) Programs: to ensure that the curriculum keeps pace with changing employer needs and continues to successfully prepare students to enter a career field.**

- A.** *Evaluate the impact of the Advisory Committee on curriculum and instructional content methods, and/or outcomes. Please include the minutes from the last three Advisory Committee meetings in the appendix.*

Developing and maintaining consistent membership in our Advisory Committee has not been very successful. This was the case at the last Program Review in 2013 and has not improved markedly since. While there are many architects, designers, manufacturer’s representatives, and past adjuncts who express interest in the Committee, it’s been challenging to get them to attend meetings. We have offered meetings at varying times of day, but this has not made it easier for busy professionals to get away from work and get to our campus. We are discussing ideas to increase participation.

That said, those who do attend meetings have had an impact on our curriculum and instructional content. Professionals from industry have provided valuable input regarding their use of CAD software, allowing our program to follow suit. We have heard, for instance, that our software students should be better versed in the Autocad concept of external references, and have emphasized that in some of our classes.

Looking ahead, we’re eager to hear feedback from our Advisory Committee on an important concept we’ve first discussed just this October of 2018: **how would they view the marketability of our grads** if we removed the General Ed requirements and reduced the typical credit load from 99 to 79, or offered more certificates instead of degrees? In the constant push-and-pull between relatively low graduation rates and the need to adequately prepare students for the workplace, there could be a middle ground worth discussing. Of course, math and writing skills need to be emphasized too...this is a discussion we address in Section 8, Recommendations.

An area in which we’ve had good success is in inviting professionals in as guest critics for design and studio courses. The ‘real life’ projects we do for specific sites in the Portland area acts as a draw for interested professionals, and we’ve been pleased to see the development of some working relationships between our students and professionals.

- B.** *Describe current and projected demand and enrollment patterns for your program. Include discussion of any impact this will have.*

Current and recent enrollment patterns have been reviewed in section 3A above. **As far as projecting future demand, we have the industry and economy to give us cues, like so many CTE programs.** As of this 2018 Program Review, the sense exists that the Portland market is booming: that could lead one to believe either that

1) demand will surge, as job-seekers will want the skills to distinguish themselves from the competition in a buzzing architectural market, or,

2) demand will drop, as people are finding work without the sort of advanced qualifications we provide.

We think the only approach to that is to continue to provide the sorts of tangible skills and solid knowledge employers look to us for.

*C. How are students selected and/or prepared (eg prerequisites) for program entry?*

**We are considered an ‘open’ program where students can enter and exit at any point during the year.**

Students do not need to have any prerequisites to enter the program, though they are strongly encouraged to attend an information session prior to registering for classes. We feel that this step not only informs students about the program and the industry, but demonstrates commitment and participation in student’s own career decision making process. Students leave the session with a clear understanding of the program, industry, job prospects and first term scheduling and start guide. This guide is available on the program web page to all prospective students.

We frame what we offer to prospective and current students in the context of a **job focus**, as opposed to striving for specific targets in enrollment, graduation and completion numbers. Our Student Support Specialist, Arlene McCashew, meets with all students to outline the demands and rigors they can expect to see, and to make them aware that the ultimate goal is gainful employment.

So we see the role of CTE programs like ours as increasingly vital to equip the workforce of the future with the practical, relevant skills needed to succeed at well-paying jobs.

While Architecture isn’t a ‘closed’ program per se, where enrollment numbers are capped, we do offer important benchmarks that must be met for students to graduate. Perhaps the most important of these is that **students earn at least a C in all of the major-specific courses to pass, and a B or better in the design studios** to earn the right to be offered a co-op position; we’ve found that in conjunction with the outcome and assessment work we do (as outlined above in Section 2), this standard ensures that our graduates are well-equipped to enter the workforce, and that their capabilities reflect well on us.

*D. Review job placement data for students over the last five years, including salary information where available. Forecast future employment opportunities for students, including national or state forecasts if appropriate.*

We have always been open and forthright about the realistic conditions of the market with our students and graduates, while at the same time assisting them as best we can toward finding that job. As it happens, in 2018, we have only positive news to offer: the job market is booming, and the skills our people have are in demand.

**Wages for architectural and civil drafters**, per the State of Oregon Employment Department, range from \$22.07 to \$34.21 per hour, with a **median pay of \$27.22 (which equates to slightly over \$60,000 a year)**, in Multnomah, Washington and Clackamas Counties in 2018. The statewide average is slightly lower at \$21.30 to \$32.72 and a median of \$26.50, or \$58,233 a year. These positions are defined as those that “prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Utilize knowledge of building materials,

engineering practices, and mathematics to complete drawings”. See the snippet below from the State of Oregon Employment Department.

**Occupation Profiles Report**

**Architectural and Civil Drafters (173011)**

Portland Tri-County (Clackamas, Multnomah, Washington)

**Description**

Prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Use knowledge of building materials, engineering practices, and mathematics to complete drawings.

Projections					
Area	2017 Employment	2027 Employment	Annual Change Openings	Annual Replacement Openings	Total Annual Openings
Oregon	1,275	1,450	18	114	132
Portland Tri-County	746	848	10	67	77

Wage Range 2018			
Area	Median Hourly	Avg Annual	Middle Range
Oregon	\$26.50	\$58,233	\$21.30 - \$32.72
Portland Tri-County	\$27.22	\$60,315	\$22.07 - \$34.21

[Data Sources and Limitations](#)

[Data Sources and Limitations](#)

Anecdotally, our graduates tend to earn a starting hourly wage of \$18.00-\$20.00 if they find their job through a staffing agency (some of which call seemingly daily, looking for candidates). That climbs to \$20.00-\$22.00 for those that are hired directly by offices/employers, and after 6 months most make in the range of \$25.00/hour and up.

**The State of Oregon Employment Department forecast anticipates a 13.7% increase in job growth in our field between 2017 and 2027** in Multnomah, Washington and Clackamas Counties. It should be said that these prognostications are far from certain, and will always include some inherent conjecture and speculation. Programs and professions evolve, shift and regenerate themselves: the best we can do is to adapt as the market does. We feel we’re doing that. See the snippet below from the State of Oregon Employment Department.

**Occupation Profiles Report**

**Architectural and Civil Drafters (173011)**

Portland Tri-County (Clackamas, Multnomah, Washington)

**Employment Outlook for Architectural and Civil Drafters**

<b>Statewide Employment Analysis</b>	Employment in this occupation in 2017 was similar to most occupations across the state. The total number of job openings is projected to be similar to job openings for most occupations in Oregon through 2027. This occupation is expected to grow at about the statewide average growth rate for all occupations through 2027.  Reasonable employment opportunities exist.
<b>Area Employment Analysis</b>	Employment in this occupation in 2017 was similar to most occupations in the region. The total number of job openings is projected to be similar to job openings for most occupations in the region through 2027. This occupation is expected to grow at about the regional average growth rate for all occupations through 2027.

[Data Sources and Limitations](#)

**Area Employment Projections for Architectural and Civil Drafters**

Area	2017 Employment	2027 Employment	% Change	Annual Change Openings	Annual Replacement Openings	Total Annual Openings
Oregon	1,275	1,450	13.7%	18	114	132
Portland Tri-County	746	848	13.7%	10	67	77

Replacement openings occur when workers permanently leave an occupation for reasons such as retirement.

[Data Sources and Limitations](#)

In sum, the demand remains for competent, skilled drafters. Architectural designers and drafters are hired by firms of all sizes or are self-employed. Employment is also available in the drafting departments of many cities, counties and state or federal agencies.

**All of our recent grads who are looking for work have found employment.** We have a number of employers asking for our grads; more than we can fill, in fact. Typical employers include engineering firms, architectural firms, large homebuilding companies and smaller residential design offices. Graduates of the PCC drafting program have worked and are currently working at reputed area design, engineering and construction firms such as Arciform, Neil Kelly, D. R. Horton, Stone Bridge Homes NW, Pacific Lifestyle Homes, Grummel Engineering, Power Engineering, i-Ten Associates, Munzing Structural Engineering, Jacobs Engineering, Interface Engineering, GBD Architects and Ankrom/Moisan Architects.

- E. Present data on the number of students completing degree(s) and/or certificate(s) in your program. Analyze any barriers to degree or certificate completion that your students face, and identify common reasons why students may leave before completion. If the program is available 100% online, please include relevant completion data and analysis.*

The data on graduation rates provided by PCC's Office of Institutional Effectiveness is very, and we believe artificially, low, since it defines enrollment as those people declaring the major. Many of those never attend classes. Of the people who officially enroll in the program and do attend at least a term's worth of coursework, our graduation rates are right in line with those of other CTE programs. And our focus has always been more on teaching those skills necessary for gainful employment; that does not always equate to a graduation track.

**One of the by-products of having an open, accessible program is that students may declare that they are Architectural Design and Drafting majors, even if they're not degree-seeking.** Some of our students come from industry, taking classes to brush up on their skills, or they are from out of state, fulfilling CE credit or certification requirements. Students intending to transfer to a four-year architecture program may also declare Architectural Design and Drafting as their major. This makes program planning challenging and completion tracking inaccurate.

**According to our class enrollment in introductory classes, we currently have about 75-100 new students each year** that enroll in introductory classes with the intent to complete a credential. Of those, about 12-25 graduate each year. Using head count data from the Office of Institutional Effectiveness (which counts all students declaring Architecture as a major), the graduation rates of students reporting as non-white is generally similar to those reporting as white (some years it is more and some less with a trend toward higher rates the past two years).

**Barriers to graduation are consistent with other programs;** home, health, work and family commitments are the most common. Many of our students work full time and only gradually work towards their credential. We also have to contend with employment as a barrier to completion. The industry is experiencing a boom and many employers hire before students complete their degree requirements.

While we don't have complete data on the specific reasons some students leave before completion, we surmise they're the typical ones seen across the board in higher education: the difficulty in balancing life/work/college,

financial hurdles, constraints of time and transportation, and difficulty in mastering new technology and concepts.

Of these reasons, the one we're best positioned to address, of course, is the last one: **difficulty in grasping new technology and concepts**. We feel we're doing a credible job of that, as outlined in several areas in this report. Of course, there is always room for improvement, and we're eager and open to any suggestions as to how we can do so.

Students who begin coursework in the Sustainable Building Certificate typically complete it. This may be due to the likelihood that they've already earned degrees, here or elsewhere, and have figured out how to engage the workload and succeed.

*F. Is the program Perkins-eligible? If so, answer the questions below. If not, put N/A for F.*

**Our program is Perkins-eligible.** Student Support Specialist Arlene McCashew's position is supported through Perkins funds.

*i. With which secondary school(s) does the program have aligned Programs of Study? Do PCC faculty meet with these HS program faculty on a regular basis?*

**We have articulations with several area high schools:** Aloha, Beaverton HS, Benson Tech, Glencoe, Sabin Schellenberg, Sherwood and Wilsonville.

Faculty member Peter Gramlich is the architecture department's liaison with high schools with whom we have articulations. He performs assessments and has provided high school teachers with examples of our student projects and shared our curricula. We've found that the best practice for developing relationships with high school faculty in our discipline is through direct engagement. Since so much of the learning is lab-based (and software-based, Autocad in particular), Peter has spent time getting to know the high school instructors and seeing how they and their students work. In the large-scale picture, the most productive channel has been the annual dual-credit symposium at Rock Creek, where he meets with all the high school instructors at once and hears their concerns and ideas.

We advise the high school faculty to have their students attend an on-campus info session; it's even better if high school counselors do too. For their part, the HS faculty members have asked us to share 'cool stuff', such as videos of physical models our students make, to help them excite their people. Perhaps the best-case scenario is to receive classes of high school students on campus, where we can walk them through our studios and labs in the interest of making things tangible. We haven't done enough of this.

*ii. Please describe the Technical Skill Assessments (TSAs) that are reported annually. Include information about the nature of the assessment, content covered, alignment of degree and certificate outcomes, when the assessment is taken by students, the number of completers, and the percentage of students meeting the identified benchmark(s) for the last 5 years.*

**The student assessments are derived from the Fall ARCH 201** (the most recent assessment date, of the Fall 2017 section, was 6/14/2018, with 6 students) **and Spring ARCH 203** (most recent assessment date 6/28/2018, 10 students), which together function as Capstone studios for our graduates.

We review the work of each student anonymously. **Performance benchmarks are addressed through a scoring worksheet that measures ability and consistency across each student's drawing set** and in individual categories (site plans, floor plans, framing/foundation plans, elevations, sections/details, overall consistency and neatness). The maximum score of each individual student assessment is 80, across 15 sub-categories. A passing score entails 60+.

In the most recent 2017-18 assessment cycle, 15 of 16, **or 93.75%, of students attained the benchmark level of 60** set by the scoring worksheet for Degree Outcome Objectives 2 and 3.

In the 2016-17 assessment cycle, 14 of 18, or 77.78%, of students attained this benchmark level.

In the 2015-16 assessment cycle, 16 of 22, or 72.73%, of students attained this benchmark level.

In the 2014-15 assessment cycle, 14 of 16, or 87.5%, of students attained this benchmark level.

In the 2013-14 assessment cycle, 14 of 18, or 77.78%, of students attained this benchmark level.

*iii. What does the SAC consider to be the most impactful use of Perkins funding for your program?*

Arlene!

**G.** *Describe opportunities that exist or are in development for graduates of this program to continue their education in this career area or profession.*

There are some options to transfer a portion of our coursework to various schools to obtain a bachelor's degree; however, we do not see or market ourselves as a transfer program. Students pursuing a transfer typically work with a general academic advisor for information about a General Transfer Degree.

As we heard from the Administration in its response to our most recent Program Review in 2013:

Creating an articulation for your students to pursue a BA or BS in Architecture is both timely and relevant.

*We applaud you for exploring this. As you explore these opportunities we ask that you work with Kendra Cawley, Dean of Academic Affairs, as she is the point person for all of PCC's articulation agreements. Her district-wide knowledge of and expertise with reviewing articulations will be invaluable when time comes to draft the agreement(s) to ensure they contain the necessary information and comply with our format requirements.*

In response, there are more Master's than Bachelor's programs these days, with some of the 4-years having been deleted. That leaves a considerable gap in the qualifications and skillsets between graduates of 2-year and 6-year programs, and probably affects our students positively in that it raises the value of their degrees. **We find our people are better equipped at certain vital skills (the 'how to build it?' of construction knowledge and the 'how to draw it?' of software ability) than their counterparts with advanced degrees.**

That said, it is neither easy nor automatic that our credits transfer into 4- or 6-year programs. We find that our credits don't typically transfer into Portland State or the University of Oregon, for instance (although we've seen ARCH 200 transfer into the U of O's Graphic Design program). There remains the age-old technical vs creative divide, where a community college CTE program like ours isn't seen by academia as providing the 'creative' side. The upshot is that our graduates often have more marketable skills than grads of 6-year programs: they are digital experts and understand how buildings go together. And our focus continues to be on jobs.

As far as articulation with BA/BS programs, the articulation we had with OSU was ended due to OSU cutting that program altogether (which was a financial issue on their part).

Portland State University still has its BA/BS program in Architectural Studies; they accept our courses on a case-by-case portfolio review. (They do guarantee that our ARCH 200 will transfer as their ARCH 100 class). Students need to be advocates for themselves when pursuing transfer opportunities; there are breakthroughs where PCC core classes are credited at PSU, and we've had several people go on to earn higher degrees there.

Portland State has not been open to formalizing any articulation between programs; however, there have been a few students who have received credit for some of our classes after demonstrating competency. Formally, they will articulate ARCH 200 as their ARCH 100 and ART 131 as one of their other first year studio classes. We have recently seen PSU students taking some of our classes (in software and construction documents) to help increase their employability.

The University of Oregon has a B. Arch. program, which is unusual for western states besides California. They are currently articulating our ARCH 200 (Principles of Architectural Design) with a first year studio.

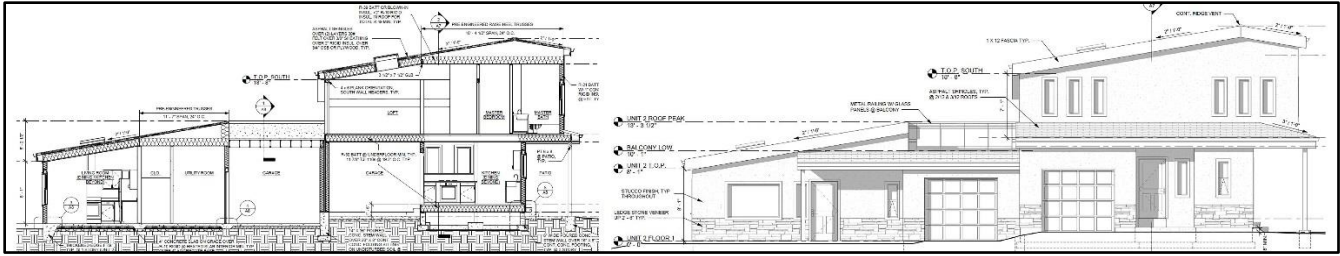
Following is a summary of all professional-degree (higher than a B. S.) Architecture programs in the western states:

- The University of Idaho has only an M. Arch. program
- The University of Washington and Washington State University have only M. Arch. programs
- Montana State University has only an M. Arch. program
- The University of Nevada has only M. Arch. program
- Wyoming has no Architecture programs
- The University of Utah has only an M. Arch. program
- The University of New Mexico has only an M. Arch. program
- Arizona State University has only an M. Arch. program

The following California colleges have a B. Arch. program:

- California College of the Arts, Cal Poly Tech, the New School of Architecture, Sci-Arc, the University of Southern California and Woodburg College

Three other California colleges have M. Arch. programs only.



**8. Recommendations.**

**A.** *What is the SAC planning to do to improve teaching and learning, student success, and degree or certificate completion, for on-campus and online students as appropriate?*

**It should first be said that the quality of work the students produce in our program is top notch.** As picked up from the vignettes in this report and will see and hear from the visuals and testimonials from recent graduates at the Program Review itself, the students exhibit phenomenal energy, remarkable passion and real talent for their craft.

We feel the work absolutely holds its own with what one would expect from a professional (4- or 5-year) architecture program, and we know that as we send our graduates into the workforce, they reflect incredibly well on us. To keep that going is the motivation that drives each of us, and we’re proud of what we do here.

Two areas which we pointed out for improvement in our most recent Program Review, and have since addressed, are:

- **Math skills.** Since some of our students have difficulty applying various math concepts to the industry specific calculations required in their core classes, we applied for and received a **PCC Foundation mini grant**; with these funds, adjunct faculty member Michelle Mueller was able to make a (really cool) [structures video](#) to help students with math as applied to calculations in their structures classes. The video is available in PCC's YouTube channel, has been ‘live’ for 4 years and shows over 40,000 views. It looks like people are referring to it.
- **Tracking of graduates.** We have a LinkedIn page and a quite populated ARCH alumni group. It’s a great way to get hold of recent grads who used LinkedIn. Students are encouraged to create a LinkedIn account in ARCH 210 (Professional Practice of Architecture). On a related note, ours was one of the programs included in an NSF grant to create an ‘exit platform’ with a green jobs focus, where graduates registered online and received periodic notices asking them to keep us ‘in the loop’ with regard to their employment and activities.

Instructor Peter Gramlich schedules past program graduates as guest speakers in his annual Fall ARCH 201 capstone studios. There is no better attention-getter than hearing from those who’ve preceded you by a year or two. Students learn about job-search and work experiences across a wide spectrum, from self-employment to being part of a large firm. The rich discussions these guests provoke are among the highlights of the term. We are considering broadening this experience into panel discussions among graduates, and opening these up to more of our current students.

- B.** *What support do you need from administration in order to carry out your planned improvements? (For recommendations asking for financial resources, please present them in priority order. Understand that resources are limited and asking is not an assurance of immediate forthcoming support. Making the administration aware of your needs may help them look for outside resources or alternative strategies for support.)*

**We would love to have another dedicated CAD lab.** Things get busy around here, with the recent increase in enrollment and the advent of the Building Inspection program. The fall 2018 studio course, ARCH 201, is offered in two simultaneous sections of 17-18 people for the first time in recent memory, as we have an unusually large group of students working its way toward completion. This same wave of students will affect class sizes and section counts in the coming Winter and Spring 2019 terms, and we may have to get used to an overload as cohort sizes increase. To prepare, we are already increasing enrollment capacities in some of our Winter 2019 lecture classes from 24 to 30, even though not all students will have a PC or place to sit.

All of this impacts ST 206, which we try to set aside as an open lab. This open CAD lab regularly gets shortchanged, as it's needed to host classes; the result is students aren't able to get their production time in. Our attempts to have Autocad and/or Revit installed on library terminals as a fall-back was flatly rejected by IT.

**On a related note, we would like to have more funds for lab tutors and on-site help.** Very little impacts student success more directly than the availability of a helping hand in the lab. Instructor Support Technician Peter Harrison and CAD Learning Skills Specialist Keri Salim tutor students in Autocad, SketchUp and Revit software. They are typically available during open lab hours to assist students. Participation in open lab sessions averages 15 to 20 students, increasing as the term progresses. Peter and Keri also schedule one-on-one private sessions for students who need more individualized help. In addition to tutoring, they create templates and handouts to assist students in key areas, and work with instructors to revise curriculum as needed. On top of that, Peter teaches a fairly heavy course load, and Keri splits her time between our department and Machine Manufacturing. The point of all this is: anything we can get in the way of lab help would be a huge boon.

**We would like an advisor for the Building Inspection program.** Department Chair Denise Roy has been filling this role since before the advent of the program, and it takes a lot of her time. Student Support Specialist Arlene McCashew's position does not include advising for this program. Our resident expert on building codes and inspections, adjunct instructor Scott Caufield, is retiring this week (in October 2018) from his over 25-year-long position as [Clackamas County Building Administrator](#), and we could imagine enticing him or someone of his caliber to act as program advisor under the PCC Special Projects rate for a few hours a week.

As the campus continues its capital improvements under the Bond Program, **we would very much like HT bond committee representation.** Our department might have more experience in space planning, construction and design than most, and we've been told the pending remodel of the HT Building might affect us in the future. The process by which our portion of the ST Building was remodeled 3 or 4 years ago wasn't seamless, and we'd like to have a voice in this process.

Thanks!



**9. Assurances.**

*Please put X's next to all three boxes to verify that...*

- X Faculty and FDCs at all of the campuses offering courses in this discipline/program have received a late-stage draft of the Program Review document.*
- X All of the division deans offering courses in this discipline/program have been sent the late-stage draft.*
- X The SAC administrative liaison has reviewed and had the opportunity to provide feedback on the final report.*