

**ALASKA STATE LEGISLATURE  
SENATE EDUCATION STANDING COMMITTEE**

April 6, 2011

8:03 a.m.

**MEMBERS PRESENT**

Senator Kevin Meyer, Co-Chair  
Senator Joe Thomas, Co-Chair  
Senator Bettye Davis, Vice Chair  
Senator Hollis French

**MEMBERS ABSENT**

Senator Gary Stevens

**OTHER LEGISLATORS PRESENT**

Senator Cathy Giessel

**COMMITTEE CALENDAR**

SENATE BILL NO. 107

"An Act making special appropriations for new engineering buildings for the University of Alaska in Anchorage and Fairbanks."

- HEARD & HELD

**PREVIOUS COMMITTEE ACTION**

BILL: SB 107

SHORT TITLE: APPROP: UNIV. ENGINEERING BUILDINGS

SPONSOR(S): SENATOR(S) ELLIS

03/21/11	(S)	READ THE FIRST TIME - REFERRALS
03/21/11	(S)	EDC, FIN
04/06/11	(S)	EDC AT 8:00 AM BELTZ 105 (TSBldg)

**WITNESS REGISTER**

ADAM TAYLOR, Intern  
Senator Johnny Ellis  
Alaska State Legislature  
Juneau, Alaska

**POSITION STATEMENT:** Presented SB 107 on behalf of the sponsor.

DALE NELSON, Member  
American Society of Civil Engineers (ASCE) and  
Chair  
Legislative Liaison Committee  
Alaska Professional Design Council (APDC)  
**POSITION STATEMENT:** Testified in support of SB 107.

GRANT BAKER, Associate Dean  
School of Engineering  
University of Alaska Anchorage  
Anchorage, Alaska  
**POSITION STATEMENT:** Testified in support of SB 107.

DOUG GOERING, Dean  
College of Engineering and Mines  
University of Alaska Fairbanks (UAF)  
Fairbanks, Alaska  
**POSITION STATEMENT:** Testified in support of SB 107.

ROB LANG, Dean  
School of Engineering  
University of Alaska Anchorage (UAA)  
Anchorage, Alaska  
**POSITION STATEMENT:** Testified in support of SB 107.

JOHN AHO, Chair  
Advisory Board  
School of Engineering  
University of Alaska Anchorage (UAA)  
Anchorage, Alaska  
**POSITION STATEMENT:** Testified in support of SB 107.

ROBERT BALDWIN, Vice Chair  
Alaska Science and Technology and  
Director  
Institute of Electrical and Electronic Engineers (IEEE)  
Anchorage, Alaska  
**POSITION STATEMENT:** Testified in support of SB 107.

JACK WILBUR, President  
Design Alaska  
Fairbanks, Alaska  
**POSITION STATEMENT:** Testified in support of SB 107.

STEPHANIE YOUNG, Student  
College of Engineering and Mining  
University of Alaska Fairbanks

Fairbanks, Alaska

**POSITION STATEMENT:** Testified in support of SB 107.

Stephen Nuss, Vice President

Anchorage Branch

American Society of Civil Engineering (ASCE)

Anchorage Alaska

**POSITION STATEMENT:**

ANNE BROOKS, representing herself

Anchorage, Alaska

**POSITION STATEMENT:** Testified in support of SB 107.

LEVERETTE HOOVER, representing himself

Anchorage, Alaska

**POSITION STATEMENT:** Testified in support of SB 107.

JIM LITTLE, Civil Engineer and

Member

Advisory Council

College of Engineering and Mining

University of Alaska Fairbanks

Fairbanks, Alaska

**POSITION STATEMENT:** Testified in support of SB 107.

MARGARET YNGVE, Student

College of Engineering and Mining

University of Alaska Fairbanks

Fairbanks, Alaska

**POSITION STATEMENT:** Testified in support of SB 107.

BEN LARUE, Group Operations Manager

Siemens Building Technology

Fairbanks, Alaska

**POSITION STATEMENT:** Testified in support of SB 107.

RICHARD HUGHES, Member

Advisory and Development Council

College of Engineering and Mining

University of Alaska Fairbanks

Fairbanks, Alaska

**POSITION STATEMENT:** Testified in support of SB 107.

ROGER BURGGRAF, representing himself

Fairbanks, Alaska

**POSITION STATEMENT:** Testified in support of SB 107.

## **ACTION NARRATIVE**

[8:03:08 AM](#)

**CO-CHAIR JOE THOMAS** called the Senate Education Standing Committee meeting to order at 8:03 a.m. Present at the call to order were Senators French, Davis, Co-Chair Meyer and Co-Chair Thomas.

### **SB 107-APPROP: UNIV. ENGINEERING BUILDINGS**

[8:03:45 AM](#)

**CO-CHAIR THOMAS** announced the consideration of SB 107.

[8:04:14 AM](#)

**ADAM TAYLOR**, Intern for Senator Johnny Ellis, sponsor of SB 107, said the purpose of the bill includes the appropriations for expanding the engineering program at the University of Alaska Fairbanks (UAF) and the University of Alaska Anchorage (UAA). He noted that the 2010 Ira Fink and Associates, Incorporated study highlighted the shortage of space at each university that is required for a successful engineering program [summary of study included in document packet]. He explained that UAA has a deficit of approximately 78,000 square feet and UAF has a deficit 54,000 square feet. Based on the space needs detailed in the study, SB 107 appropriates \$50 million for expanding the engineering facility at UAF and \$75 million for UAA. He stressed that there is a demand for engineers in both communities and significant space needs at both campuses.

He spoke to the background of the bill. He explained that Grant Baker, Associate Dean for the School of Engineering at UAF, has pointed out the shortage of engineers in Alaska, the scale of industry demand for "Alaskan grown" engineers, and the resources required for the University of Alaska (UA) to meet this demand. He added that some companies are resorting to sending Alaska's engineering design work outside of the state. However, outside engineering firms often do not have the technical knowledge or foundation in arctic or northern engineering, which is critical to the work the state would like done. Only 18 percent of engineers in Alaska have degrees from UA and 35 percent are not residents. He noted that, according to the Department of Labor and Workforce Development (DOLWD), the shortage of engineers is expected to grow.

He said in 2006 the UA Board of Regents set a priority to double the annual engineering graduates by 2014 and the legislature needs to take steps in order to help UA reach that goal. He

noted that since 2006 the enrollment at UAF's engineering program has tripled and UAA's has doubled. However, current facilities cannot accommodate the current enrollment. The appropriations included in the bill are developed to facilitate the design and construction of these facilities and provide the resource for the state to "grow their own engineers."

[8:07:53 AM](#)

DALE NELSON, Member, American Society of Civil Engineers (ASCE) and Chair, Legislative Liaison Committee, Alaska Professional Design Council (APDC), testified in support of SB 107. He said he has practiced civil engineering in the state for over 40 years. He said the ASCE has 800 members in Alaska and 140,000 members throughout the United States. He noted that one of ASCE's goals is the continuation of engineering education. In regards to APDC, there are over 1,500 members. APDC continues to work closely with each member society and with the Architect, Engineers, and Land Surveyors Board.

He said that there are a lot of engineers that do not "stick around" Alaska; if engineers are trained in the state then they are more knowledgeable of the environment and conditions and more likely to stay. There is a demand for new engineering students, however in order to properly train and educate students adequate space is needed, he explained.

He showed the committee an example of an advertisement from Conoco Philips placed in the Juneau Empire, which focused on an individual attending UAA's School of Engineering.

[8:15:01 AM](#)

GRANT BAKER, Associate Dean, School of Engineering, University of Alaska Anchorage, testified in support of SB 107. He drew the committee's attention to a packet produced by UAA which summed up its argument and support for the bill [packet included in the document packet, titled: Support New UA Engineering Buildings SB 107]. He explained that he is here to represent the students and industries that need engineers. He noted that there are 1,000 current engineering students, 100's of alumni that have graduated, and at least 100 industries that need engineers. He explained that industries are encountering the issue of individuals coming to retirement age and there is no one to take their place. This will only become more of an issue in the future, he added.

He read the following from the packet [located on page 3]:

In a state as underdeveloped as Alaska, the need for engineers is crucial. From developing natural resources to building infrastructure to creating communications systems that link remote villages, the jobs that engineers perform are required to move Alaska forward.

He explained that the engineering plan is to double the number of engineers at UA to at least 200 per year; currently UA is about half-way there. He noted that the issue is seniors have become "bottlenecked" in the program because UA doesn't have the lab space needed in order for these individuals to graduate.

He explained that the study done by Ira Fink showed that the growth of UAA and UAF has been tremendous. For example, UAA had 150 majors in 2005 and 650 in 2010. However, there has not been an increase in space. He noted that UAF is also experiencing a similar need for space. He said that UA is also observing, in the past year, an added wave of students that are coming from the engineering academies from high schools.

He continued that DOLWD's Alaska Economic Trends report is also included in the packet provided. He paraphrased the following from the report [located on page 25 of the document]:

All together, more than 81,000 projected STEM [science, technology, engineering, and math] openings will need to be filled.

In 2008, the highest STEM employment was engineering, life and physical sciences, and computer and math science, in that order.

He continued on page 26:

Because an educated workforce is fundamental to STEM jobs, emphasis at the national level is on improving math and science education for students in kindergarten through 12th grade.

He said SB 107 does not only help university students but it helps K-12 students as well because it gives individuals a place to go after graduating and an incentive to stay in STEM and learn more science and mathematics.

He read the following from page 28 of the report:

Alaska's STEM workforce is aging, and replacements will be needed as these workers retire. About 41 percent of Alaska's STEM workers were ages 45 to 64 in 2008, and many of these workers will retire in the near future.

Finally, he read the closing paragraph of the Trends report:

The contributions that engineers, scientists, and other STEM workers make to the state are multifaceted, as they solve problems and bolster the economy throughout Alaska's industries.

He stressed that SB 107 secures a future of Alaska and is an economic stimulus and powerhouse for generating the economic growth of the state.

8:23:03 AM

SENATOR FRENCH asked whether the two buildings would get UAA and UAF up to its 200 graduate per year goal or beyond that.

MR. BAKER replied yes; the space would meet the absolute minimum current needs of students, as of the fall of 2009. He noted that he believes UAF and UAA could graduate more than 200 students per year; however it would stretch the facilities.

SENATOR FRENCH asked if the workforce could absorb the 200 graduates per year.

MR. BAKER answered yes; at least 200. He referred back to the Alaska Economic Trends report, which discussed the current engineering occupations available in Alaska. He noted that engineering training is very versatile and individuals can go into other areas that are important to the state as well.

8:24:57 AM

DOUG GOERING, Dean, College of Engineering and Mines, University of Alaska Fairbanks (UAF) testified in support of SB 107. He thanked the committee for the past facility planning funds that were requested through the UA Board of Regents. He referred the committee to the UA Engineering Plan for 2010, which is available on the UA website and was summarized in the packet [discussed previously by Mr. Baker]. He explained that the plan does conclude that there are significant space deficits at both UAF and UAA, based on current enrollment and research needs. The facility planning effort has been necessitated by the unprecedented growth at UAF in both engineering enrollments and

research activity. He noted that following the engineering initiative put into place in 2006, the college's enrollment has increased by 70 percent. UAA's enrollment has also increased dramatically. He said that he believes this increase is due to the growth in recruitment and outreach efforts and increased focus on STEM education in the United States. He noted that this increased enrollment currently adds a lot of pressure on the staff and facility. He reiterated Senator Ellis' comments, made previously on the Senate floor: that it is important to have engineers who know the state and are not afraid of the climate and who know about arctic engineering principals.

[8:28:19 AM](#)

ROB LANG, Dean, School of Engineering, University of Alaska Anchorage, testified in support of SB 107. He said the need for these facilities is as strong as it was last year when he came before the committee. He thanked the committee for their past support. He said he believes having strong facilities will draw students to UAF and UAA and that there is also a large increase in interest from high school students. He opined that these facilities could make a significant difference for the state and the quality of life for Alaskans.

[8:30:50 AM](#)

JOHN AHO, Chair, Advisory Board, School of Engineering, University of Alaska Anchorage (UAA), testified in support of SB 107. He provided a summary of his background, which included 35 years of engineering in Alaska. He said UAA has an inadequate engineering facility, which could result in the loss of graduating high school seniors and current university students to outside universities. He noted that, in his experience, hiring residents educated in Alaska is a win-win situation because individuals are trained and familiar with the environmental conditions and their roots are in the state. He explained that there is a tendency to lose individuals who are not used to the harsh climates.

[8:32:50 AM](#)

ROBERT BALDWIN, Vice Chair, Alaska Science and Technology and Director, Institute of Electrical and Electronic Engineers (IEEE), testified in support of SB 107. He explained that high enrollment demand is best met in the locale where it exists and direct access is extremely important for students considering an education in engineering. He explained that the lack of space and equipment can threaten the accreditation of a university and could cause some of Alaska's brightest students to leave the state. He said "we cannot afford to continue to ship this vital

resource outside Alaska to benefit other states." He explained that a stable engineering workforce composed of resident Alaskans has immediate economic benefits for the state and a large potential to provide innovative new products, businesses, and industries.

[8:36:23 AM](#)

JACK WILBUR, President, Design Alaska, testified in support of SB 107. He said that he attended UAF and has been practicing engineering in Alaska for 40 years. He explained that UAF desperately needs expanded engineering facilities in order to meet the ever-expanding need for engineers in the state. He said that Design Alaska, an architectural and surveying firm, depends heavily on UAF to provide the growing firm with engineering graduates. There are eighteen Design Alaska engineers who are UAF graduates, nine of its employees are currently seeking UAF undergraduate engineering degrees, and two of its employees are seeking UAF graduate degrees in engineering. He urged the committee to support SB 107.

[8:38:16 AM](#)

STEPHANIE YOUNG, Student, College of Engineering and Mining, University of Alaska Fairbanks, testified in support of SB 107. She explained that she is a senior-level civil engineering student graduating in May. She said that she is an example of the successful engineering program at UAF and a witness to the growth of the program. She stressed the need to expand the facilities for UAF's engineering program including both lab and classroom space.

[8:39:19 AM](#)

Stephen Nuss, Vice President, Anchorage Branch, American Society of Civil Engineering (ASCE) testified in support of SB 107. He said he is very familiar with the facilities at both UAF and UAA. He explained that investment into these two facilities is needed and the return to the Alaska's future will be significant. He noted that as Alaska's infrastructure ages the need for engineers to plan, perform, and oversee its renewal will be necessary.

He added that for ASCE's summer internship program there were eighteen applicants, with five of the applicants attending college out-of-state. He opined that the passage of SB 107, which will provide investment to these facilities, will attract and retain the best and brightest students who will lead Alaska's development into the future.

[8:41:05 AM](#)

ANNE BROOKS, representing herself, Anchorage, Alaska testified in support of SB 107. She said that both ASCE and the Institute of Transportation Engineers are concerned about the aging infrastructure in Alaska. She reiterated the importance of "growing our own" engineers in Alaska. She explained that, according to the U.S. Army Corps of Engineers (USACE), more often than not, engineers brought to the state will only stay for their three-year commitment before leaving, at a loss of \$70,000 to USACE per year, per person. This is not sustainable. She stressed that the funding involved in SB 107 would be a smart investment. She concurred with Mr. Baldwin's testimony that "we are at a crisis level." She explained that since she graduated from UAA in 1988 and aside from the ANSEP [Alaska Native Science & Engineering Program] building and the Integrated Science building, the facilities have changed very little. Today, students are working in substandard conditions for a major university. She urged the committee to support SB 107.

[8:44:34 AM](#)

LEVERETTE HOOVER, representing himself, Anchorage, Alaska testified in support of SB 107. He noted that he is the general manager of Siemens Building Technology, is on the advisory board for the Diamond Engineering Academy and Lathrop Engineering Academy, and on the Board of Directors for the School Business Partnerships for the Anchorage School District. He added that he is also an adjunct professor for the University of Alaska Anchorage at Mat-Su College. He said that all of his points have been summarized by previous testimony. He explained that five years ago Siemens Building Technology invested money to start the engineering academies at Diamond and Lathrop High School. He added that the corporation has invested a quarter million dollars over the last five years to recruit engineers from out-of-state and none of those engineers are still located in the state.

[8:46:39 AM](#)

JIM LITTLE, Civil Engineer and Member, Advisory Council, College of Engineering and Mining, testified in support of SB 107. He said UAF has a wonderful team of engineering professors who are extremely exceptional in the educational process and their involvement with the community. He stressed that SB 107 would give the faculty the tools to continue doing so.

[8:48:25 AM](#)

MARGARET YNGVE, Student, College of Engineering and Mining, University of Alaska Fairbanks, testified in support of SB 107. She explained that she is a student in the Mining and Geological program at UAF. She said that in the last year the department has experienced substantial growth. She explained that three years ago she was the only freshman entering into geological engineering and she will be graduating with 13 other individuals. She explained that in the last year the department has experienced the loss of all student engineering club spaces and student study areas to make room for more classrooms. She continued that the geohydrology lab has, essentially, become warm storage and the geomaterial lab is a 7 by 14 foot room with no windows.

[8:50:24 AM](#)

BEN LARUE, Group Operations Manager, Siemens Building Technology, testified in support of SB 107. He explained that he has been directly involved with UAF for the past 15 years both as a student and as an employer through Siemens. He stressed that Siemens needs engineers that are locally trained and this is the best time to invest in the engineering programs at UA.

[8:51:21 AM](#)

RICHARD HUGHES, Member, Advisory and Development Council, College of Engineering and Mining, University of Alaska Fairbanks testified in support of SB 107.

[8:52:07 AM](#)

ROGER BURGGRAF, representing himself, testified in support of SB 107. He explained that he works in the mining industry and employs numerous geological engineers who have graduated from UAF. He said with the growth and need of engineers in order to build Alaska's future it is important to have the facilities that will enable UA to graduate quality engineers.

[8:53:19 AM](#)

CO-CHAIR THOMAS announced he would keep public testimony open and hold SB 107 in committee.

[8:53:49 AM](#)

There being no further business to come before the committee, Co-Chair Thomas adjourned the meeting at 8:53 a.m.