

ALASKA LEGISLATURE COMMITTEE FILES 1981-1982 8672

1529 SHESS SB 695 - SB 698 1529

## ANCHORAGE COMMUNITY COLLEGE

### 1. APPLIED SCIENCE BUILDING

The Anchorage Community College will advertise for bids for a new science building to be located east of Building "A" on the ACC campus.

The architectural designer for this project is TRA/FARR of Anchorage, Alaska.

This project will provide needed classroom, laboratory, and office space, and related classroom and office furniture to accommodate enrollments in existing programs. Laboratory equipment is being requested separately through a General Fund appropriation in the amount of \$429,600.00 for FY 83. The proposed facility will be occupied by the Departments of Nursing, Dental Assisting, Dental Hygiene, Medical Lab Technicians, and will also contain 7-9 general classrooms. The proposed facility will provide approximately 25,000 gross square feet with the structural capability for future expansion. All required utilities and paved parking will be provided:

It is intended that this facility will be complete in the fall of 1983.

## 2. AVIATION COMPLEX PHASE II

Anchorage Community College will request of the 1982 Legislature \$8,000,000.00 to construct Phase II of the Aviation Complex.

Funding for this project will provide approximately 27,000 square feet of classroom, class lab, office and auditorium space for the air traffic control, aviation administration, and professional piloting divisions of the Anchorage Community Aviation Program.

The classrooms and auditorium in this facility will be available for utilization by all areas of the Community College System, Aviation Community, and general public. This will insure maximum utilization of the facility from the beginning of operation and provided needed classroom space for ACC.

The total project will include all required parking utilities and finished landscaping.

The facility is expected to be operational in 1984.

### 3. NEW ADMINISTRATION BUILDING

The Anchorage Community College will request of the 1983 Legislature \$15,000,000.00 to construct a new Administration Building.

Request for new building to replace three temporary, relocatable structures currently housing instructional programs and support services. This building would permit centralization of administration, and student service departments. It will also provide space for instructional programs, computer labs, and conference rooms.

Buildings G, H, and I are temporary relocatable structures moved to the Anchorage Community College campus in 1970. They are wood-frame, one-story buildings constructed by Modular Designed Homes. They do not have permanent foundations. The buildings do not conform to building regulations presently. In 1978, the State Fire Marshal cited code violations in Buildings G and H. The estimated cost to remedy the violations cited by the Fire Marshall is \$290,000.00. The State Fire Marshal has agreed to the University's plan to install alternate life safety provisions, such as smoke detectors throughout the buildings for a limited time until a replacement building is completed. If a replacement building is not planned for the near future, we will be required to substantially renovate these temporary buildings to conform to the fire codes.

The intent is to replace the three facilities with one, to combine like functions centrally, and to adequately support functions that are currently undersupported and inefficient. The Master Plan is to combine all Student Services in a central area from counseling to registration and increase communication and efficiency.

It is intended that this facility be complete for occupancy in 1987.

#### 4. ACC CHUGIAK/EAGLE RIVER EXTENSION CENTER SITE ACQUISITION

Anchorage Community College will request of the 1984 Legislature \$7,000,000.00 for the ACC Chugiak/Eagle River satellite extension land study land purchase and improvements.

Approximately 100 acres will be needed to accommodate a projected growth of 1,500 full time equivalent students at the present Chugiak/Eagle River Extension.

The successful Chugiak, Eagle River Extension will continue to grow and expand in response to the rapidly developing Eagle River/Chugiak area. This expansion provides a convenient and accessible postsecondary educational opportunity for the residents now residing in the area. This is especially true for graduating high school students who may find the travel distance to Anchorage a financial burden.

It is intended that this land study and acquisition shall be completed by 1986.

5. SPINE COMPLETION

\*Not Included in Statewide Submission to Governor Request in FY83.

The Anchorage Community College will request of the 1985 Legislature funds to construct a pedestrian spine connecting the existing Physical Education Facility/Student Center with the proposed Administration Building.

This project will provide a safe, tempered access for students, staff, and visitors; and will complete and compliment the existing and proposed spine network throughout the UAA campus.

6. SOUTH ANCHORAGE SATELLITE CAMPUS SITE

\*Not Included in Statewide Submission to Governor Request in FY83.

Anchorage Community College will request of the Legislature future funds for a satellite campus land study and land purchase in the South Anchorage bowl area.

Approximately 100-150 acres will be needed to accommodate a projected growth of 2,500-3,000 students. The satellite campus would be located south of Dimond Boulevard in the growing "bedroom" area of Anchorage.

The current ACC campus property does not have adequate land for for any future facilities' expansion after the addition of the following: The Applied Science Phase I, the proposed Administration/Classroom Building, Applied Science Phase II, a parking structure, and other required parking spaces by code and the allowance of some land to be preserved for its natural beauty.

A satellite campus will fulfill the mission of providing educational opportunities within commuting distance of our constituents.

7. APPLIED SCIENCE BUILDING - PHASE II

\*Not Included in Statewide Submission to Governor Request in FY83.

The Anchorage Community College will request future funds to construct an approximately 30,000 square foot addition to the Applied Science Building funded in 1980 and projected for occupancy for the Fall Semester of 1983.

This project will provide needed classroom, laboratory, and office space; as well as related classroom and office furniture to accommodate existing programs and future growth.

The proposed facility will be occupied by the departments of Mathematics, Natural Sciences, Medical Office Assisting, Biology, Chemistry, Media Production, general classrooms, and administrative personnel.

8. PARKING STRUCTURE, 500 CARS

\*Not Included in Statewide Submission to Governor Request in FY83.

Anchorage Community College will request of the Legislature future funds to construct a parking garage to accommodate 500 cars for students, staff, and visitors. This will serve to satisfy the local municipal ordinance requiring parking for new buildings as well as reduce pressure on fire lands and roads from the large commuter population at ACC.

9. ADMINISTRATION/CLASSROOM BUILDING SOUTH ANCHORAGE CAMPUS

\*Not included in Statewide Submission to Governor Request in FY83.

Anchorage Community College will request future funds of the Legislature to construct a 50,000 square foot

Administration/Classroom Building for the South Anchorage Campus.

This facility will provide administration and support services, office space, and traditional instructional classroom space.

The total project will include all required parking, utilities and finish landscaping.

10. VOCATIONAL/TECHNICAL BUILDING - ACC SOUTH ANCHORAGE CAMPUS

\*Not included in Statewide Submission to Governor Request in FY83.

Anchorage Community College will request future funds of the Legislature to construct a Vocational/Technical facility for the ACC South Anchorage Satellite Campus.

This facility will permit ACC to transfer and consolidate various vocational programs for increased accessibility, efficiency, and effectiveness. It will provide classrooms, class laboratories, and office space required.

The total project will include all required parking, utilities, and finish landscaping.

#### 11. CLASSROOM/ADMINISTRATION BUILDING

\*Not Included in Statewide Submission to Governor Request in FY83.

Anchorage Community College will request of the Legislature future funds for an approximately 35,000 square foot facility located in Eagle River to fulfill the needs of the fast growing community. The facility will serve 1,500 full time equivalent students and will provide adequate classrooms, laboratories, and offices for faculty, students, and administration.

The successful Chugiak, Eagle River Extension will continue to grow and expand in response to the rapidly developing Eagle River/Chugiak area. This expansion provides a convenient and accessible postsecondary educational opportunity for the residents now residing in the area. This is especially true for graduating high school students who may find the travel distance to Anchorage a financial burden.

It is intended that this land study and acquisition shall be completed by 1986.

THE PRECEDING DOCUMENT(S) MAY NOT FILM  
LEGIBLY BECAUSE OF POOR QUALITY OF THE  
ORIGINAL.

M E M O R A N D U M

March 1, 1982

TO: Senate H.E.S.S. Committee  
Senator Charles Parr, Chairman

FROM: Patrick H. Anderson  
Municipality of Anchorage

RE: SB 657

The Committee requested that I provide certain information about the proposed purchase by the University of Alaska of approximately 40 acres of land presently owned by Alaska Pacific University for \$11.5 million.

Presently, the land is zoned PLI, a copy of the appropriate ordinance is attached. A request has been made by APU to change the zoning from PLI to R.O. A copy of the R.O. ordinance is also attached. The R.O. was approved by the Planning and Zoning Commission on October 12, 1981 and forwarded to the Anchorage Assembly for action. At the Mayor's request, a public hearing before the Assembly on the change request has been delayed to April 23, 1982. The Municipality would like to see the land purchased by the University of Alaska and kept in the PLI zoning category.

The land is apparently suitable for high rise construction. Providence Hospital to the west of the parcel is a high rise facility and a gravel pit to the east of the parcel also indicates good solid foundation support.

At present, a joint committee of UAA, APU, and the Municipality of Anchorage is meeting regularly to discuss planning for the area's future.

Attachments

Zoning Map. The new Zoning Map may correct drafting and other errors or omissions in the prior Zoning Map, but no such correction shall have the effect of amending the original Zoning Map. Such new Zoning Map shall be marked "This Zoning Map adopted by ordinance of the Assembly on       (date)       supersedes the Zoning Map adopted       (date)       which statement shall be signed by the President of the Assembly and attested by the Clerk. Unless the prior Zoning Map is lost or has been totally destroyed, the map or significant parts thereof remaining after partial destruction shall be preserved, together with all records of the Assembly regarding its adoption and amendment.

D. The following rules for interpretation of use district boundaries on the Zoning Map shall apply:

1. district boundaries indicated as approximately following the center-lines of right-of-way lines of streets, highways, or alley, shall be construed to follow such centerlines of right-of-way lines;
2. district boundaries indicated as approximately following platted lot lines shall be construed as following such lot lines.

E. The Municipality of Anchorage is hereby divided into the following use districts:

1. PLI Public Lands and Institutions District.
2. R-1 One-family Residential District.
3. R-1A One-family Residential District (Large Lot).
4. R-2 Multiple-family Residential District (allowing up to eight units per lot, based on the Table in Section 21.40.040(F)(3).
5. R-2A Two-family Residential District (Large Lot).
6. R-2D Two-family Residential District.
7. R-3 Multiple-family Residential District.
8. R-4 Multiple-family Residential District.
9. R-5 Rural Residential District.
10. R-6 Suburban Residential District (Large Lot).
11. R-7 Intermediate Rural Residential District.
12. R-8 Rural Residential District (Large Lot).
13. R-9 Rural Residential District.
14. R-O Residential-Office District.
15. D-2 Residential Development District (Two-family).

16. D-3 Residential Development District (General).
17. B-1 Local and Neighborhood Business District.
18. B-2A Central Business District Core.
19. B-2B Central Business District Periphery.
20. B-2C Central Business District.
21. B-3 General and Strip Commercial Business District.
22. B-4 Rural Business District.
23. I-1 Light Industrial District.
24. I-2 Heavy Industrial District.
25. I-3 Rural Industrial District.
26. W Watershed District.
27. U Unrestricted District.

Each of the districts listed above may be subject to special limitations in accordance with the provisions of Chapters 21.35 through 21.55 of this Title. (Adapted from GAAB 21.05.040).

~~Residential District~~  
~~Residential District~~

The following statement of intent and use regulations shall apply in the PLI district:

- A. The PLI district is intended to include major open lands and major public and quasi-public institutional uses, including government office buildings and existing land reserves for public and institutional use.
- B. Permitted principal uses and structures:
  1. parks, parkways, greenbelts, land reserves and related facilities;
  2. golf courses, playgrounds, playfields and the like;
  3. zoos, museums, historic and cultural exhibits and the like;
  4. water conservation and flood control installations;
  5. educational institutions, including public, private or parochial academic schools, colleges and universities;
  6. hospitals, sanitariums, children's homes, nursing homes, convalescent homes, homes for the aged, and the like, provided that hospitals or sanitariums for the treatment of drug addicts or alcoholic patients shall be permitted only by Conditional Use;
  7. Cemeteries, subject to the standards set forth in Section 21.50.140.

8. sewer installations and water supply installations;

9. utilities installations;

10. convents, monasteries and administrative offices of religious organizations;

11. headquarters or administrative offices for such charitable or eleemosynary organizations as Red Cross, Tuberculosis Society, Cancer Society, Boy Scouts, Girl Scouts and similar quasi-public organizations of a non-commercial nature;

12. governmental office buildings.

**C. Permitted accessory uses and structures:**

1. crematoriums and mausoleums as accessory uses to permitted cemeteries;

2. uses and structures which are necessary or desirable adjuncts to permitted principal uses and structures, where such accessory uses and structures are under the management or control of the organization or agency responsible for the permitted principal use or structure.

**D. Conditional Uses:**

Subject to the requirements of the Conditional Use standards and procedures of this title, the following uses may be permitted:

1. churches and synagogues, along with the customary accessory uses, including parsonages, day care and meeting rooms;

2. natural resource extraction on tracts of not less than five acres;

3. oil and gas development, on tracts of not less than five acres;

4. commercial farming on tracts of not less than 10 acres, including the storage (at least 50 feet from any property line) of farm equipment used on the same tract;

5. radio and television transmission towers;

6. recreation uses, including commercial recreation uses for a period of time to be determined by the Planning Commission;

7. vocational schools, trade schools, manual training centers and the like;

8. correctional institutions, rehabilitation centers, reformatories and the like;

9. Planned Unit Developments;

10. governmental service shops, maintenance and repair centers and equipment storage yards.

**E. Prohibited uses and structures:**

Any use or structure not of a character indicated under permitted uses and structures or permitted as a Conditional Use.

**F. Minimum lot requirements:**

Lot width 100 ft.  
Lot area 15,000 sq. ft.

**G. Minimum yard requirements:**

1. Front yard: 25 feet  
2. Side yard: 10 feet  
3. Rear yard: 15 feet

**H. Maximum lot coverage by all buildings: 30%.**

I. Maximum height of structures: unrestricted, except that structures shall not interfere with Federal Aviation Administration Regulations on airport approaches.

J. Signs. Signs may be allowed in connection with any permitted use, subject to the supplementary district regulations and the Uniform Sign Code.

K. Parking. Adequate off-street parking shall be provided in connection with any permitted use. Parking shall conform to the minimum requirements set forth in the supplementary district regulations unless it is demonstrated to the Building Official and the Traffic Engineer that the patrons and/or employees of the land use will generate a lower parking demand than anticipated by the supplemental district regulations. The burden of proof and demonstration of the lower parking demand lies with the property owner. Information that could demonstrate the lower parking demand may include: mass transit routing, car pooling, joint parking, arrangements or other parking and transit means as set out in a written parking and transportation impact plan submitted to the Traffic Engineer for approval. Variances to Section 21.45.080 Minimum Off-Street Parking Requirements may be granted by the Building Official in this use district upon the recommendation of the Traffic Engineer. Any change in the land use to which the variance granted by the Building Official. Any variances granted shall be executed by the recording of a standard parking agreement.

L. Loading. Adequate off-street loading area shall be provided in connection with any permitted

use, the minimum of each use to be as provided in the supplementary district regulations.

- M. Ground cover. All areas not devoted to buildings, structures, drives, walks, off-street parking facilities or other authorized installations shall be covered with one or more of the following: lawn grass, shrubbery, trees or other suitable ground cover materials. (Adapted from GAAB 21.05.050, AO 77-129, AO 81-1785).

**21.40.030 R-1, R-1A — Single-family Residential Districts.**

The following statement of intent and use regulations shall apply in the R-1 and R-1A districts:

- A. These districts are intended as urban and suburban single-family residential areas with lot population densities. R-1 and R-1A use regulations are identical, but existing dimensional differences in lot width and area are intended to be preserved. Structures and uses required to serve governmental, educational, religious, non-commercial recreational, and other needs of such areas are permitted within such districts or are permissible as Conditional Uses subject to restrictions intended to preserve and protect their single-family residential character.

B. Permitted principal uses and structures:

1. single-family dwellings (only a single principal structure may be allowed on any lot or tract);
2. public, private and parochial academic elementary schools;
3. high schools with primarily academic curricula, provided that principal access to such schools shall be directly from a street of Class I or greater designation upon the Official Streets and Highways Plan;
4. parks, playgrounds and playfields, municipal buildings and uses in keeping with the character and requirements of the district;
5. public branch libraries.
6. family residential care

C. Permitted accessory uses and structures:

1. home occupation, subject to provisions of the supplementary district regulations;
2. noncommercial greenhouses, gardens, storage sheds, garden sheds and toolsheds, private barbecue pits;

3. private garages;

4. the outdoor harboring or keeping of dogs, animals and fowl in a manner consistent with the requirements of all other titles of this code. Paddocks, stables or similar structures or enclosures which are utilized for the keeping of animals other than dogs shall be at least 100 feet from any lot line;

5. family care;

6. private storage in yards of noncommercial equipment, including noncommercial trucks, boats, aircraft, campers or travel trailers in a safe and orderly manner and separated by at least five feet from any property line.

- D. Conditional Uses. Subject to the requirements of the Conditional Use standards and procedures of this title, the following uses may be permitted:

1. commercial greenhouses and tree nurseries;
2. airstrips and heliports, if adequate approach and noise buffer areas are provided;
3. utilities substations;
4. nursing homes, convalescent homes and similar institutional uses subject to the provisions of the supplementary district regulations;
5. art schools, music schools, dancing schools and the like;
6. churches and synagogues along with the customary accessory uses including parsonages, day care and meeting rooms;
7. residential Planned Unit Development;
8. natural resource extraction on tracts of not less than five acres;
9. privately owned neighborhood community recreation centers in keeping with the character and requirements of the district, provided the center is oriented to a particular residential subdivision or housing project and that the uses within are delineated as conditions to approval;

10. quasi-institutional houses;

11. day care.

E. Prohibited uses and structures:

1. any use or structure not of a character indi-

The following statement of intent and use regulations shall apply in the R-O district:

- A. The R-O district is intended to include urban and suburban residential and professional office uses that are needed and appropriate in areas undergoing a transition, or in areas where commercial uses might be damaging to established residential neighborhoods.

The R-O district is further intended to provide a mix of low- to medium-density residential uses with certain specified business, personal and professional services that can function efficiently without generating large volumes of vehicular traffic. The regulations and restrictions in the R-O district are intended to protect, preserve and enhance the residential uses while permitting uses characterized principally by consultative services or executive, administrative or clerical procedures.

B. Permitted principal uses and structures:

1. single-family, two-family and multiple-family dwellings;
2. hotels, motels, and motor lodges on sites with a minimum of 14,000 square feet, provided that principal access to such uses shall be from streets of Class I or greater designation on the Official Streets and Highways Plan;\*
3. boarding and lodging houses;
4. private clubs and lodges;\*
5. parks, playgrounds and playfields, municipal buildings in keeping with the character of the district;
6. museums, historic and cultural exhibits, libraries and the like;
7. family residential care, day care and 24 hour child care facilities;
8. public, private and parochial academic schools;
9. hospitals, nursing homes, convalescent homes, homes for the aged, medical clinics, medical and dental laboratories, research centers, and the like;
10. offices of physicians, surgeons, dentists, osteopaths, chiropractors and other practitioners of the healing sciences;
11. accounting, auditing and bookkeeping services;

12. engineering, surveying and architectural services;

13. attorneys and legal services;

14. real estate service and appraisers;

15. stock and bond brokerage services;

16. insurance services;

17. photographic services;

18. funeral services, provided, however, that crematoriums are specifically prohibited;

19. banks, savings and loan associations, credit unions and similar financial institutions;

20. private employment agencies, placement services and temporary personnel services.

21. Headquarters or administrative offices for such charitable or eleemosynary organizations as Red Cross, Tuberculosis Society, Cancer Society, Heart Association, Boy Scouts, Girl Scouts and similar quasi-public organizations of a non-commercial nature. \*Uses involving the sale, dispensing or service of alcoholic beverages may be allowed by Conditional Use only.

\*Uses involving the sale, dispensing or service of alcoholic beverages may be allowed by Conditional Use only.

C. Permitted accessory uses and structures:

1. accessory uses incidental to any of the principal uses above listed;
2. hotels, motels, or motor lodges having 20 or more rental units may include personal and professional service establishments and restaurants which are clearly incidental to the operation of the permitted principal use.
3. family care.

D. Conditional Uses. Subject to the requirements of the Conditional Use standards and procedures of this Title, the following uses may be permitted.

1. town houses, row houses and office buildings built to a common wall at side lot lines;
2. churches and synagogues, along with the customary accessory uses including parsonages, day care and meeting rooms;
3. utilities substations;
4. off-street parking spaces or structures;

6. privately owned neighborhood community recreation centers in keeping with the character and requirements of the district, provided the center is oriented to a particular residential subdivision or housing project and that the uses within are delineated as conditions to approval.

**E. Prohibited uses and structures:**

1. any use or structure not of a character indicated under permitted uses and structures or permitted as a Conditional Use;
2. storage or use of mobile homes or quonset huts;
3. any use which causes or may reasonably be expected to cause excessive noise, vibration, odor, smoke, dust or other particulate matter, toxic or noxious matter, humidity, heat or glare at or beyond any lot line of the lot on which it is located. "Excessive" is defined for these purposes as a degree exceeding that generated by uses permitted in the district in their customary manner of operation, or to a degree injurious to the public health, safety, welfare or convenience.

**F. Minimum lot requirements:**

Use	Lot Area (sq. ft.)	Lot Width (ft.)
1. single-family dwelling	6,000	50
2. two-family dwelling	6,000	50
3. 3-through 10-family dwelling	6,000	50
4. Apartment buildings for 11 or more families may only be constructed on sites having a minimum area of 14,000 square feet and minimum frontage of 100 feet on a Class I or greater street, and shall be limited by a floor area ratio (F.A.R.)* of 2.0, and subject to the yard requirements of this section.		

\*Floor area ratio is defined as the maximum gross floor area of a building on a lot or parcel, divided by the area of the lot or parcel. (F.A.R. of 2.0 provides for 28,000 gross square feet of building on a lot with an area of 14,000 square feet.)

5. all other permitted uses:

a. lot area: 6,000 sq. ft.

b. lot width: 50 ft.

**G. Minimum yard requirements:**

1. front yard: 10 feet, except as provided in the supplementary district regulations;
2. side yard: single-family, two-family and multiple-family dwellings: 5 feet, provided, however, that where buildings exceed 35 feet in height, minimum side yards shall be increased one foot for each five feet in height exceeding 35 feet;  
all other permitted uses: none, provided, however, that if any side yard is provided, it shall not be less than five feet; the purpose being that adjoining buildings shall either directly abut or shall maintain a minimum of five feet between such buildings;
3. rear yard: 10 feet;
4. multiple-family dwellings shall provide a usable yard area of 100 sq. ft. per dwelling unit.

**H. Maximum lot coverage by all buildings:**

1. single-family, two-family, and multiple-family dwellings: 50%;
2. all other permitted uses: unrestricted.

**I. Maximum height of structures: unrestricted, except that structures shall not interfere with Federal Aviation Administration Regulations on airport approaches.**

**J. Signs. Signs may be allowed in connection with any permitted use, subject to the provisions of the supplementary district regulations.**

**K. Parking. Adequate off-street parking shall be provided in connection with any permitted use, the minimum for each use to be:**

1. residential uses: one vehicular parking space for each dwelling unit;
2. all other permitted uses: as provided in the supplementary district regulations.

**L. Loading. Where applicable, off-street loading facilities shall be provided in accordance with the provisions of the supplementary district regulations.**

**M. Ground cover. All areas not devoted to buildings, structures, drives, walks, off-street parking facilities, or other authorized installations shall be covered with one or more of the following:**

lawn, grass, shrubbery, trees or other suitable ground cover materials. (Adapted from GAAB 21.05.0501 AO 77-219).

**21.40.140 B-1 — Local and Neighborhood Business District.**

The following statement of intent and use regulations shall apply in the B-1 district:

A. The purpose of the B-1 district is to encourage the establishment of areas for convenience business uses which tend to meet the daily needs of local and nearby neighborhoods. The district is intended to be small and compactly designed.

B. Permitted principal uses and structures:

1. grocery stores, delicatessens and food specialty shops;
2. meat and seafood markets;
3. retail bakeries;
4. hardware stores;
5. shoe-repair shops;
6. bookstores and stationery stores;
7. drugstores;
8. self-service laundry and self-service dry cleaning shops;
9. beauty shops;
10. barbershops;
11. restaurants, tearooms, cafes, and other places serving food or beverages conducted entirely within fully enclosed buildings, but specifically excluding any drive-in eating facilities;
12. knit shops, yarn shops, dry goods, dress-making and notions stores;
13. small appliance repair shops;
14. photography studios, art studios;
15. post offices;
16. on-premises dry cleaning establishments using a perchlorethylene process or similar nonflammable, nonaqueous solvent, provided, however, that large commercial and industrial laundry and dry cleaning plants are prohibited;
17. laundry and dry cleaning pickup stations;

18. single-family and two-family dwellings;

19. noncommercial parks, playgrounds, and government buildings in keeping with the character of the district;

20. libraries;

21. medical and dental offices and offices of attorneys, accountants, engineers and other professions regulated under state law;

22. family residential care, day care and 24 hour child care facilities.

23. insurance and real estate office.

\*Uses involving the sale, dispensing or service of alcoholic beverages may be permitted by Conditional Use only.

C. Permitted principal uses and structures subject to maximum gross floor area limit:

1. department or variety stores: 4,000 sq. ft.;
2. clothing store: 3,000 sq. ft.;
3. furniture and home appliances store: 3,000 sq. ft.;
4. catalog showroom: 2,000 sq. ft.;
5. music and record store: 1,400 sq. ft.;
6. hobby store: 1,400 sq. ft.;
7. florist: 1,200 sq. ft.;
8. gift and card shop: 1,000 sq. ft.;
9. bank or similar financial activity with predominant service to local depositors and customers, not including drive-in facilities: 3,000 sq. ft.;
10. frozen food locker: 1,400 sq. ft.;
11. local administration offices for charitable and eleemosynary agencies of a non-commercial nature: 1,000 sq. ft.

D. Permitted accessory uses and structures. Accessory uses and structures customarily incidental to any permitted principal uses listed in subsections B or C hereof. In the same structure as a permitted principal use, one dwelling unit may be occupied as an accessory use.

E. Conditional Uses. Subject to the requirements of the Conditional Use standards and procedures of this Title, the following uses may be permitted:

1. gasoline service stations;

University of Alaska  
Facilities Planning & Construction  
3356 College Road  
479-7591

January 11, 1982

TO: Dr. Vincent Haneman  
Dean, School of Engineering

FROM: Gerald V. Neubert *GN*  
Assistant Director

SUBJ: Response to Request for Information on an Addition  
to the Duckering Building

The idea you propose of putting an addition on the east end of the Duckering Building has some merit and some problems. Regional Architect, Jim Parkes, Fire Chief, Bill Shechter and myself have met and briefly outlined some of the advantages and disadvantages listed below.

SINGLE LOADED CORRIDOR WITH OFFICES - THREE STORIES HIGH

The advantage of this design would be that it would involve the minimum disruption to the lowest level and it would provide approximately 9 offices per floor for a total of 27 offices. The disadvantage is that it is inefficient in terms of ratio of corridor space to office space and has excess surface area for heat loss.

DOUBLE LOADED CORRIDOR BESIDE - THREE STORIES HIGH

The advantage of this design is that it has the same corridor as the option above but provides twice the number of offices, it is more efficient in terms of ratio of corridor to office and is twice as efficient for heat loss area over the single loaded corridor. The internal disruption on each floor to connect corridors thru to the existing corridors is the same in either the single loaded corridor or the double loaded corridor so that since one has to live with the disruption on each floor at least this double loaded corridor does provide twice the useable area when the project is completed.

FILLING IN THE ENTIRE KEYSTONE SHAPE SPACE

This design affords the maximum size of addition possible in Duckering but faces problems with what to do with existing windows and their replacement with internal walls. Additional ventilation would have to be provided to replace operable windows.

Summary: We feel that the best alternative is the double loaded corridor leaving the internal hole open for development of an atrium by roofing over the entire third level of the Duckering Building. The Fire Chief advises that this double loaded corridor addition will have to be sprinkled but that the existing building can remain un-sprinkled. I am fairly certain that a new elevator must be provided in this addition because the existing Duckering elevator does not meet size requirements for handicapped access.

One further consideration is the disruption to the existing lower level during construction. We feel fairly certain that the portion underneath the three story addition must be vacated during construction because of excessive noise, dust and disruption caused by extending columns down thru the space and providing utilities and other services. In our discussions we further surmised that if the whole keystone area were filled, the most cost effective option would be to completely remove the existing first floor level of the keystone and build a new four story structure filling in that area. Of course should this project become a reality extensive studies would be done to determine the cost analysis of removing the keystone versus building up from the first floor.

This addition could be a dramatic improvement to the environment of the Duckering if the existing first floor roof could be converted into an external plaza by installing a walking surface, benches, planters, etc. It would even be more dramatic if it were roofed over at the third floor level so that it became an internal heated area for student lounging and gathering. Its interesting that this would actually decrease the external surface area of the building and make it more thermally efficient.

#### COSTS

The following costs are very rough and do not take into consideration any sort of a detailed take-off but are simply a projection of square footage size times a dollar amount per square foot.

A) Single Loaded Corridor

18 X 92 = 1,656 X 3 = 4,968 Sq.Ft. X \$300. = \$1,490,400.

B) Double Loaded Corridor

30 X 90 = 2,700 X 3 = 8,100 Sq.Ft. X \$300. = 2,430,000.

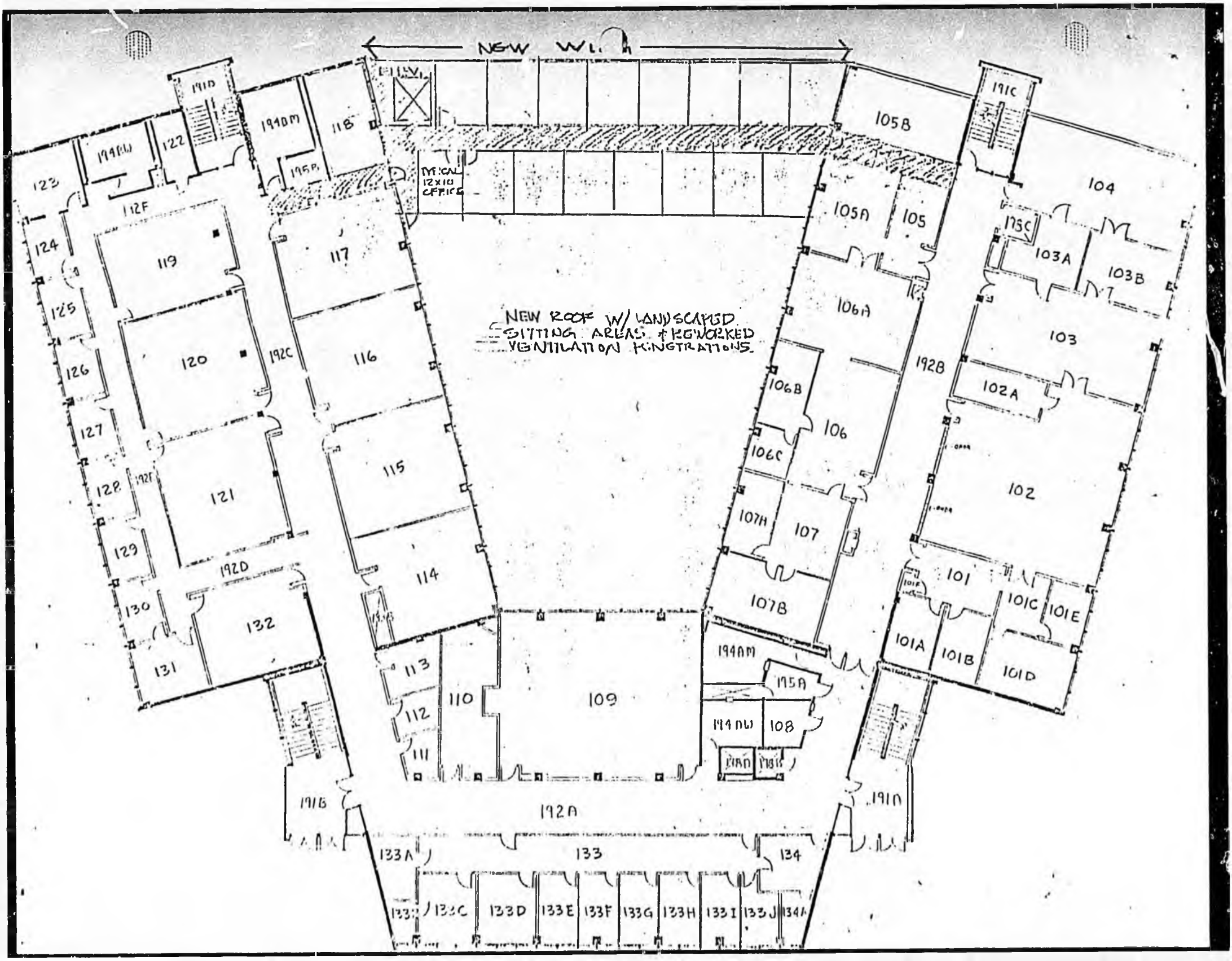
C) Entire Keystone

104 X 70 = 7,280 X 3 = 21,840 Sq.Ft. X \$300. = 6,552,000.

Vince, all this discussion although interesting has limited value when considering whether or not to do an addition to the Duckering Building. What is really needed is a program of space needs. Is this addition a substitute for the northern engineering research facility proposed last year, or is this addition simply a mechanism to get more office space for Duckering? When considering the merits of this addition we should also look at the overall space needs of the Fairbanks Campus. Does the campus need more office space in addition to the needs of the engineering department if so this office addition may be advisable. Should additional classroom space be programmed into an addition? An indepth analysis of space needs must proceed any hasty commitments to add a wing onto the Duckering Building.

GVN:lfh

cc: Chris Ahoy  
Chance'lor O'Rourke



SECTION C

MAJOR AREAS OF RESEARCH

## MAJOR AREAS OF RESEARCH

I. Ice and snow engineering - properties of ice covers, ice forces on structures, ice control, ice crossings, ice fog, ice-crude oil interaction.

II. Frozen ground engineering - terrain evaluation, static and dynamic frozen ground behavior, slope stability, drainage and erosion, soil structure interaction.

III. Hydrotechnical engineering - snow melt and ground infiltration, groundwater-permafrost studies, culvert icing, icing control, hydropower icing control, interaction of streams and frozen terrain, scour and erosion in ice jams, frazil ice processes, coastal engineering effects of icing.

IV. Environmental engineering - fire equipment operation, snow accumulation, water source detection, water distribution, water treatment processes, reduction of visibility limitations due to fog and ice fog.

V. Resources and transportation - construction equipment testing, engine performance, use of indigenous materials; construction techniques.

VI. Building component performance - vapor transport infiltration, icing material compatibility; building envelopes.

VII. Communications, power and control - application of modern communications technology to the north, power distribution; improved utilization of resources through modern control methods.

VIII. Municipal facilities engineering - equipment design and testing, construction techniques, energy loss analyses, utility design techniques.

IX. General testing and simulation - low temperature properties of lubricants, wind tunnel studies; mechanical equipment testing.

X. Materials Research - Fracture mechanics, low temperature fatigue, transition temperature, freeze-thaw cycling.

XI. School of Mineral Industries - The petroleum engineering program will conduct low and high temperature experiments, use a specially designed pressure-volume-temperature apparatus and conduct a core analysis program. The geological and mineral preparation engineering programs will be provided space in a phase II addition.

XII. ADOT/PF Research - The Alaska Department of Transportation and Public Facilities (ADOT/PF) is involved in many of the above listed areas; specific space for their use will be included in a phase II addition.

## ICE AND SNOW ENGINEERING

Ice and snow are major features of the northern environment. Both a detriment and a resource, they must be taken into consideration in the planning, design construction, and operation of engineering efforts. The engineer must have a good knowledge of their properties and behavior in order to reduce their detrimental effects and to make full use of their value as a natural resource.

Northern engineering experience has clearly identified problems involving snow and ice for which knowledge and capability are required. An urgent need is information on the lateral and vertical forces exerted by ice covers. An understanding of the interaction between ice and structures is necessary for the design of structures to be placed in rivers, lakes, or offshore. Also, hydroelectric development flood control measures, harbor facilities, and navigation channels require an understanding of the growth and movement of floating ice, evolution of ice covers, and factors controlling these processes.

Snow and ice can be used for the construction of roads, load supporting platforms, and pads on both land and water. More information is necessary for the design of these structures to ensure that they will perform effectively and safely. Methods of performance monitoring and maintenance should be better developed.

Snow presents a major disturbance to transportation, an

effect magnified by remoteness and exposure. It is particularly important for northern civil engineers to fully understand how to reduce the disrupting effects of snow and how to remove it as efficiently as possible. The control of snow deposition for such purposes as augmenting water supply or ameliorating the ground thermal regime should be well understood. Snow drifting and control must also be studied.

In some areas, there is a need to be able to recognize avalanche susceptible terrain in order to avoid such sites or provide suitable defense measures. Industrial and community activity can cause ice fog at low temperatures. The engineer must be able to minimize this situation or alleviate already existing problems.

## SOIL MECHANICS AND FROZEN GROUND ENGINEERING

Although the rate of development in arctic to subarctic Alaska has been greatly accelerated (principally due to the exploration and production of petroleum resources) various engineering solutions to many problems related to soil mechanics and frozen ground engineering are lacking.

The upgrading of existing communities and construction of new communities; resource development including petroleum, mining, and hydroelectric works; and transportation facilities including pipelines, roads, railroads, bridges, and airstrips will all benefit from this research.

Crash programs during construction have been the norm for many engineering projects and such an approach has not contributed any significant improvement in the engineering design and construction of various northern projects. The existence of frozen, frozen-thawed and subsoils boundary conditions under extreme climatic conditions have created complex engineering problems. They have underlined the urgency of not only theoretical solutions and laboratory studies but also for full scale field testing and performance monitoring.

It is anticipated that prospective developments in the near future that will be influenced and benefitted by the results of soil mechanics and frozen ground engineering research are: Construction of new communities and upgrading of existing communities which require updated design and

construction techniques pertinent to arctic and sub-arctic conditions; transportation facilities including roads, airports, railroads, pipelines, and resource development including hydroelectric, petroleum and mining activity. One of the largest gas pipeline projects in the world is currently in the planning and initial design phase. The project faces many engineering problems that are to be resolved in the coming years. Projects related to the above areas need systematic research studies to close the gap of engineering knowledge and to make the design and construction of engineering projects in northern regions more cost effective.

which can block the channel at bridges, culverts, or other river engineering structures. Little is known about the effects of aufeis on stream morphology.

Formation of ice jams is poorly understood and we are unable to predict location and associated flood stages except in very crude ways. Flow measurement techniques during periods of ice movement are difficult and limit understanding of peak flows. Instrumentation to measure ice thickness remotely (without physical penetration) are available, but are not yet generally operational. Outlet flows from lakes with ice cover and ice cover formation on rivers (downstream from lakes and reservoirs) are poorly understood.

We have limited ability to predict interference with water intakes by shore ice formations. Sea ice movement, behavior, and ice scour in the coastal zone are not well documented. The dates of ice in, ice out, and extent of the shorefast ice zone are poorly known. Techniques for extending navigation and access to harbors and connecting channels are developing but many difficulties remain.

Maintenance and repair of river and stream crossings on certain facilities have consumed large amounts of money (the Alaska Highway is a good example). There is a need for better reporting of performance and experience with actual crossings, and for identification of reasons for failures. Areas of uncertainty in design include predictions of bed


## HYDROTECHNICAL ENGINEERING

Water is an important resource of the North which often influences or becomes a prime criteria for many resource development projects. The construction of roads, pipelines, municipal facilities and dams all require an understanding of northern water resources. The economics of hydropower has become an important political issue.



There is a lack of basic data needed to select sites for hydropower installations. The hydraulic problems associated with hydropower structures in cold regions are reasonably well understood. Innovative rockfill dam designs suitable to permafrost and shield terrain are required.

In the cases of culverts and other structures, the state-of-the-art could be considerably improved. So far, few hydraulic structures have been built in the continuous permafrost zone and expertise is not well established in this area. Although perhaps strictly not a research item, there is a great need for improved coverage of mapping, aerial photography and surficial geology to aid investigations of hydro sites.

The influence of permafrost and river ice on geomorphology of river channels has been examined on a sporadic basis, but there has been little systematic analysis of the differences between northern and southern rivers. Small northern streams are often subject to the formation of aufeis (ice accumulations formed by surficial accretion),



scour and bank erosion in the presence of permafrost, the effects of chilled pipeline crossings on subbed flows, and the environmental aspects of culverts.



## ENVIRONMENTAL ENGINEERING

Environmental engineering in the north attempts to provide a healthy and aesthetic environment for all living things in an economical manner, including water source development and treatment, wastewater treatment and disposal, solid waste management, air pollution control and industrial waste management. Both natural and imposed constraints confine the routine efforts of the environmental engineer. The natural constraints are the result of the northern environmental setting including such things as low temperatures and frozen ground. Imposed constraints are the result of regulations and guidelines developed as part of national and regional programs for environmental protection. Although there are many important areas requiring research and development, the application of current technology would substantially improve the present level of sanitation and living conditions in northern communities, which are usually more primitive than in comparably-sized southern communities. The expenditure of substantial funds for construction of municipal/ environmental facilities has brought about significant improvements in the past decade, and is expected to continue to do so in the future.

Three categories of environmental engineering research are: Identifying the public health and environmental engineering effects, requirements, benefits, and costs for northern developments, identifying needed modifications in

the existing regulatory constraints, and improving the economic, aesthetic, and health impact within the existing constraints. Within these categories research is needed in the areas of water supply, groundwater protection, water and wastewater treatment, the receiving environment, solid waste management, air quality control, and industrial waste management.

## BUILDING AND BUILDING COMPONENT PERFORMANCE

As the price of fuel continues to escalate all sectors of the economy in Alaska are seeing a larger percentage of their budgets going to heating/utility costs. This fact is highlighted by the current interest throughout the state in energy efficient building design. A need exists for an integrated systematic analysis of this problem to determine the most cost effective and energy effective solutions. For example, it may turn out that it is more worthwhile to improve the efficiency of a furnace 15% than to expend money for added insulation for existing buildings.

The thermal performance of building materials and building systems require testing under the extreme environmental conditions common to Alaska. Placing building materials under repeated stresses of this nature will assist us in making the proper selection during initial design to insure energy and cost efficiency over the long haul.

A laboratory facility is required to provide test chambers for testing composite wall sections, composite roof sections, doors, windows, floor sections, etc. Facilities will be capable of determining properties of insulation such as thermal R values, and air leakage rates.

## RESOURCES AND TRANSPORTATION

Historically, large civil works projects in northern regions have been extremely expensive, particularly dependent on climate and time considerations, and too frequently associated with high maintenance costs. Primarily as a result of currently intense resource development the North is faced with increasing pressure for facility improvements.

To accommodate these pressures more positively than in the past requires the construction of facilities in a timely and economic manner, while still achieving cost-effective solutions. A multidisciplinary approach is needed to seek these solutions. The cross coupling of talents between the School of Engineering and the Department of Transportation and Public Facilities is essential to obtain the greatest use of the limited resources available. The research effort should encompass construction equipment testing and modification, more efficient use of indigenous construction materials, and improved construction techniques for roads and other public and private projects.

generation facilities and possible interties, and collection and coordination of data relating to power systems in rural areas.

Large scale power generation projects, such as the proposed Susitna project, tend to generate controversy. Often, sides are taken before any real data base for decision-making exists. The proposed research facility would serve as a center for simulation studies, benefit/cost studies, and other information related to larger power systems in Alaska. Close cooperation with utilities, private consulting firms, and other branches of State and Federal Government is envisioned. The research facility could serve as a coordinating center and clearing house for data relating to power generation and distribution in Alaska.

Communications in Alaska have been revolutionized by satellites. University of Alaska engineers and scientists have been recording data and tracking satellites from the evening of the launch of the very first satellite, in 1958. Alaska has one of the most sophisticated networks of earth stations in the world as a result. As satellite technology continues its rapid advance, important questions will arise concerning application of the new technology in Alaska.

The importance of a reliable, modern communications system in Alaska to diverse fields such as education, transportation, data transmission and telemetry, news, cul-

## COMMUNICATIONS, POWER AND CONTROL

The Northern environment creates unusual problems in the general fields of electrical power distribution and generation, and communications. Some of these problems are "classic" in the sense that they have been around for a long time, for example, insulating material failure, poor grounding, and interference to communications by ionospheric disturbances. Some problems are new, for example, the effect of ice fog on the 36 GHz satellite frequencies. The proposed research facility would support practical, engineering research directed toward solving problems, as opposed to investigating basic physical processes.

Supplying electrical power in sufficient quantities with good reliability and at low cost remains a top priority in rural areas of Alaska. Many of the practices currently in use could be greatly improved. The tendency has been toward a piecemeal approach to solving the basic problem, resulting in astronomical power costs in some cases approaching a real cost of one dollar per kilowatt hour of generated electricity. Systematic studies of the problem have been fragmented and incomplete, resulting in the present situation.

Research is needed in the areas of grounding, protection of buried cables in frozen ground, performance of insulating materials in extreme cold, cost-effectiveness studies of various small-scale alternatives, coordination of

generation facilities and possible interties, and collection and coordination of data relating to power systems in rural areas.

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The importance of a reliable, modern communications system in Alaska to diverse fields such as education, transportation, data transmission and telemetry, news, cul-

tural exchange, and entertainment is obvious. Less obvious perhaps is the fact that new versions of "colder" techniques than satellite transmission hold great promise. The Northern Engineering Research Facility should engage in applied propagation work such as propagation predictions for traditional backup systems such as HF and VHF radio, as well as predictions for new frequencies and systems. Solutions for the "thin route" communications problem (long distances and few customers) must be studied and coordinated. Again, the facility can function as clearing house and data collection center. Applied work on atmospheric ducting and attenuation, auroral and other high latitude disturbances, use of novel compander schemes for greater efficiency, and economic analyses of proposed communications systems for the State of Alaska will be done at the Center.

The absence of a standards/calibration facility on campus has hindered research efforts on all fronts. It would be appropriate to establish a secondary standards facility for time/frequency, voltage and current, radiation and power/energy, temperature, heat flux and other basic calibration needs. The facility should be made available to industry, and other laboratories and institutes at nominal cost. In addition to obvious calibration functions, environmental radiation safety standard measurements, and similar support functions could be supported. Again, close cooperation with other units, such as the Division of Com-

communications, DOTPF, the Geophysical Institute, Alascom, and others, is strongly indicated.

A separate computer for engineering/scientific functions only is needed if the Center is to function efficiently. Specifications are to appear in a subsequent report.

## MUNICIPAL FACILITIES

In the past, engineering in the north has consisted mainly of taking practices from more temperate areas and applying them to the unique conditions of the north. In most cases, the application of current knowledge and resources can be used to solve northern problems. However, the development of designs and techniques geared specifically toward northern problems can result in much more efficient use of available resources. For example, although common building insulations are capable of reducing heat losses to acceptable levels, the development of new materials which are more efficient could result in lower construction costs and life cycle costs for buildings.

The development of well-insulated pipes for buried water systems has resulted in reduced operational costs, although conventional uninsulated pipes were capable of providing service with higher temperature water and continuous flow to prevent freezing. The development of new techniques and materials has historically been based upon improvements to existing technology. Although this type of research is valuable and should continue, the development of unique and original solutions to engineering problems in the north should be emphasized. A good example of this innovative type of research and design is the development of the pit-orifice in 1953, which is now universally used to prevent freezing by causing continuous circulation through

water service lines.

#### GENERAL TESTING AND SIMULATION

Knowledge of the lubrication properties of lubricants at low temperatures is of vital importance to engineers who must design, operate or maintain mechanical equipment in cold regions. This facility would require refrigeration equipment capable of cooling a small test chamber to -80 degrees F. Lubrication testing equipment would also be required.

Wind tunnel facilities should be available for conducting tests such as human performance and cold weather clothing performance under a wide variety of environmental conditions. Other tests which could be performed include snow fence design for harvesting snow for potable water, studies on building geometry to avoid snow drifting and elimination of ice and frost formation on structures such as intake grills on turbines or the superstructures of ships. Temperature and humidity control should be included in this facility.

A cluster of cold test rooms should include two small rooms and one large room all capable of temperatures down to -60 degrees F. The large room would be sized to house an entire vehicle for cold weather performance testing. The small rooms would be designed for testing equipment ranging from fans and pumps down to such sub-assemblies and components like belts, bearings, switches, etc. Three small wet

labs would also be included.

#### MATERIALS RESEARCH

Low temperature phenomena in engineering materials is of fundamental concern to the State of Alaska. Investigations in the range from 0 to -60 degrees celsius are required on fracture and fatigue properties, freeze-thaw cycling, and state transitions.

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITY  
RESEARCH

The close association of the engineering departments and the Research Section of ADOT is mutually beneficial. The close proximity of the West Ridge research units and the activities associated with the Energy Center give additional justification for housing the ADOT Research activities on campus.

The Department of Transportation and Public Facilities has responsibility for the planning, construction and maintenance of the State airports and airport buildings, the marine highway system with its ports and docks, the land highway systems including bridges, most public buildings including the bush schools, and State operated communication systems. The Research Section responds to a variety of applied engineering studies related to these responsibilities. A perspective summary of the current projects appears in the next section.

From this list it can be seen that the ADOT/PF has interest in the areas of soil mechanics, highway and building materials, structures, buildings, communications, and transportation systems. This engineering research is needed to test new products, methods, and techniques, and provide a basis for rational planning for the future.

## PETROLEUM ENGINEERING

Space is required for the growing program in petroleum and petrochemical engineering. Research would include fundamental principals of petroleum production systems, behavior of oil and gas reservoirs and properties of underground earth fluids. A special facility will enable study of the PVT behavior of gas-condensation and dissolved gas systems.

SECTION E

SUMMARY OF SPACE REQUIREMENTS

## SUMMARY OF RESEARCH SPACE REQUIREMENTS

<u>A. Research use</u>	<u>Space required (sq. ft.)</u>
1. Hydraulic, ice and sediment flume	9,600
2. Ice model basin	6,000
3. Frozen soils hydraulics	610
4. Soils and frozen ground	2,000
5. Fracture, impact and fatigue testing	400
6. Ice testing	180
7. Mechanical equipment testing	2,000
8. General structural testing	2,400
9. Computer facility and calibration and standards testing	2,400
10. General electrical engineering	2,400
11. Low temperature and general wind tunnels	2,500
12. General petroleum engineering	2,700
Sub-total A. Research use	33,190
<u>B. Support space</u>	
13. Wood, machine, welding, electronics shops and vehicle modification garage	1,800
14. Loading-receiving area	1,250
15. General supplies stockroom	1,000
16. Two conference and seminar rooms	2,500
17. Fifteen offices for technicians	

and research staff	1,875
18. Public lobby and display area	1,250
Sub-total B. Support space	9,675
Total occupied space	42,865
Space for access, hallways, etc. (20% of total)	8,573
TOTAL REQUIRED SPACE	51,438 sq. ft.

Facility Description:

1. A multi-purpose hydraulic flume which would accommodate water, sediment, and ice flow for both moving and stationary experiments. A traveling carriage on top would allow for instrumentation and towing of ships, piers and other structural models. A wave generating capability would be part of the apparatus. The space would be approximately 120x40 feet in two levels.

2. A large deep model basin which would accommodate experiments relating to two-dimensional studies of water, sediment and ice for a variety of shore and structure configurations. Capability for slow ice, sediment and water movement and for wave action. Would have a ceiling-hung carriage system, primarily for instrumentation. Would have an approximate 50 x 80 feet working area and be able to accommodate depths up to six feet. A lower service level of 25 x 80 feet is required.

3. A frozen soils hydraulics laboratory will feature a low temperature testing area with an adjacent sample preparation

area. A variety of experiments will be performed including studies of frost heave near gas pipelines. The required space is 17 x 36 feet.

4. A soils and frozen ground laboratory will enable testing of a variety of foundation materials important to cold regions engineering. Some areas of emphasis include model testing, frost heave strength determination and thaw-consolidation studies. The required space is 40 x 50 feet.

5. A materials strength laboratory will include provisions for an impact machine, fatigue testing, and an universal testing machine, all in a low temperature environment. A 20 x 20 feet space is needed.

6. The ice testing laboratory will include space for slicing, sawing and turning ice samples. Space will be available for a variety of testing on small ice samples. The required space is 12 x 15 feet.

7. A mechanical equipment testing and lubrication laboratory will include 3 warm rooms, 2 cold rooms and one very cold room. A regions will be conducted in these laboratories. Special attention will be given to development of low temperature lubricants. A 38 x 56 feet area is required.

8. A large working area to accommodate experimental setups for structural testing, frozen ground infiltration, ice and snow trafficability tests, vehicle and equipment experiments, model waste treatment systems and other similar ex-

periments. Essentially an open area but with adequate provision for overhead services, structural support, drains, chilled water, and other provisions to permit efficient testing and change-over of experimental setups. This space would require a 60 x 40 feet open area with high head room.

9. A computer room will service the entire School of Engineering for data acquisition, analysis, and report preparation. It will include space for mainframe CPU's, disc and tape drives, tape and data storage, and a small operator work area. A calibration and standards facility will provide a variety of secondary standards for electronics equipment at the university and throughout the state. The respective required areas are 48 x 26 feet and 24 x 48 feet.

10. A general electrical engineering laboratory will provide space for a variety of experiments in electrical power, control communicates, and data handling systems. The space includes a AF and RF anechoic chamber, a circuit board darkroom and an assembly and fabrication area. The total required space is 50 x 48 feet.

11. A medium velocity/low temperature wind tunnel would have a vertical and horizontal test section. The tunnel would allow speeds up to ninety feet per second (60 mph) with temperature and humidity control. One example of research would be freezing rates of water drops in sprays for artificial ice islands. A low velocity/low temperature

wind tunnel would allow experiments with building components, structural design and related phenomena. The total required area would be 120 x 20 feet.

12. The petroleum engineering space includes areas for high and low temperature experiments, core analysis and a specialized PVT facility. The total space required is 30 x 90 feet.

13-18. A number of support areas are provided for in the facility plan. These include wood, machine, welding and electronic shops, a loading and receiving area, a general supplies stockroom, two conference and seminar rooms and fifteen offices throughout the facility for technicians and research staff. A public lobby and display area is included to explain the work in progress in the laboratory. The total support area space is 9675 sq. ft.

A remote field test site will be an integral part of the frozen soils and electrical equipment testing portion of the facility. The site will require two 10 x 20 feet buildings and data transmission linkage to the main building. The total field area is 2 acres.

## Position Paper

School of Engineering

University of Alaska - Fairbanks

### I. Executive Summary

The University of Alaska-Fairbanks School of Engineering should be nationally preeminent in all facets of northern engineering, education, and engineering research. It is the only school of engineering in the United States located in an arctic climate. This unique location should be capitalized upon to a greater degree than it is today enabling the University to establish a national and international reputation in this field. The effects of the extremes of northern climates is the single most important facet of engineering education to the State of Alaska.

The School of Engineering has one overriding objective; to attain excellence in all phases of its teaching, extension, research and public service to the citizens of the State of Alaska. The support requirements to achieve excellence are outlined in this position paper for the next five years and are compared with present levels. Substantially more resources will be needed than in the past. This is caused in part by increased student enrollment projections, by the fact that engineering education is much more expensive on a per student basis than most other disciplines and by the increasing sophistication and amount of technology required to prepare an engineering professional. Larger budget projections also recognize that the School of Engineering has in the past been underfunded in number of faculty and support staff, classroom and laboratory space for teaching and research, laboratory equipment, and faculty professional development.

The School has maintained its accreditation at an absolute minimum stance in spite of previous low funding levels, but is facing reaccreditation this year. Comments from previous accreditation reports are attached, as well as the recent study by a consultant for the President of the University of Alaska.

Table I provides a School of Engineering summary of present and future resource requirements to obtain excellence during the next five years. Only existing Departments and Programs are included. Costs are based on 1981 dollars so that inflation is not factored into projections.

Laboratory space projections require that Phase I of the Northern Engineering Research Facility will be partially completed in 1983-84 and totally completed in 1984-85. Assuming that it provides 30,000 ft<sup>2</sup> research area plus about 20,000 ft<sup>2</sup> support space, approximately 11,000 ft<sup>2</sup> additional laboratory area will still be needed by 1985-86. Classroom area must increase from 8,700 ft<sup>2</sup> to 13,800 ft<sup>2</sup> by 1985-86.

Increased space is essential because of expected increases in student enrollment and because there is presently no dedicated laboratory area available for research within the School of Engineering.

Table II provides a School of Engineering summary which includes the proposed addition of a new Chemical and Bio-engineering Department (details in Appendix A). In this case, approximately 16,000 ft<sup>2</sup> additional laboratory space beyond that supplied by Phase I of the Northern Engineering Research Facility and 15,800 ft<sup>2</sup> of classroom area beyond that presently available is required by 1985-86.

Table I. School of Engineering Summary for Existing Departments and Programs Only  
(Details in Appendix A)

Present and Future Resource  
Requirements for Next Five Years  
(in Thousands of 1981 Dollars)

Category	Year					
	80-81	81-82	82-83	83-84	84-85	85-86
Equipment (\$)	77.7	475.3* <sup>3.5</sup>	389.2	517.4	546.4	615.2
Services (\$)	22.8	30.2 <sup>2.6</sup>	33.6	36.4	45.0	48.9
Supplies (\$)	12.5	33.8 <sup>2.8</sup>	34.3	40.9	47.4	52.0
Salaries (\$)	774.3	1075.5 <sup>1.4</sup>	1271.0	1351.0	1357.0	1432.0
Student Work-Study (\$)	20.8	26.0 <sup>2.1</sup>	29.8	32.8	36.8	39.5
Travel (\$)	34.7**	45.5	56.2	64.8	75.2	82.5
Research Seed Support (\$)	0.0	60.0 <sup>2.0</sup>	152.0	166.0	172.0	180.0
Faculty (FTE) <sup>1</sup>	12.5	17.3 <sup>1.4</sup>	19.6	22.4	22.7	25.5
Staff (FTE)	2.8	5.0	7.3	9.2	9.9	11.1
Graduate Assistants	0.0	7.0 <sup>2.5</sup>	14.0	22.0	29.0	35.0
Lab Space (1000 ft <sup>2</sup> )	11.4	14.4	15.9	31.7	51.2	52.3
Classrooms <sup>2</sup> (1000 ft <sup>2</sup> )	8.7	9.8	9.8	12.0	12.6	13.8
No. Undergrad. Students <sup>3</sup>	242	305 <sup>2.5</sup>	380	445	540	645
No. Graduate Students <sup>3</sup>	4	60 <sup>2.6</sup>	88	101	128	143

1. FTE=Full time equivalent (12 mo.)
2. Shared space
3. Future enrollment figures are estimated.

\* Larger than 1982-83 request because of Civil Engineering and Environmental Quality Engineering laboratory modernization

\*\* Includes special one-time allocation of \$19,500

Table II. School of Engineering Summary Including Proposed Chemical and Bio-Engineering  
(Details in Appendix A)

Present and Future Resource  
Requirements for Next Five Years  
(in Thousands of 1981 Dollars)

Category	Year					
	80-81	81-82	82-83	83-84	84-85	85-86
Equipment (\$)	77.7	575.3*	489.2	617.4	646.4	715.2
Services (\$)	22.8	40.2	46.6	56.4	65.0	68.9
Supplies (\$)	12.5	43.8	39.3	45.9	52.4	57.0
Salaries (\$)	774.3	1220.5	1466.0	1581.0	1637.0	1752.0
Student Work-Study (\$)	20.8	26.0	29.8	32.8	36.8	39.5
Travel (\$)	34.7**	50.5	62.2	71.8	83.2	92.5
Research Seed Support (\$)	0.0	80.0	182.0	196.0	212.0	220.0
Faculty (FTE) <sup>1</sup>	12.5	19.8	22.6	25.9	26.7	30.5
Staff (FTE)	2.8	6.0	8.8	10.7	11.9	13.1
Graduate Assistants	0.0	3.0	16.0	25.0	33.0	39.0
Lab Space (1000 ft <sup>2</sup> )	11.4	15.4	16.9	36.7	56.2	57.3
Classrooms <sup>2</sup> (1000 ft <sup>2</sup> )	8.7	9.8	10.8	13.0	14.6	15.8
No. Undergrad. Students <sup>3</sup>	242	315	400	475	580	685
No. Graduate Students <sup>3</sup>	44	60	93	111	138	153

1. FTE=Full time equivalent (12 mo.)

2. Shared space

3. Future enrollment

Figures are estimated.

\* Larger than 1982-83 request because of Civil Engineering and Environmental Quality Engineering laboratory modernization

\*\* Includes special one-time allocation of \$19,500

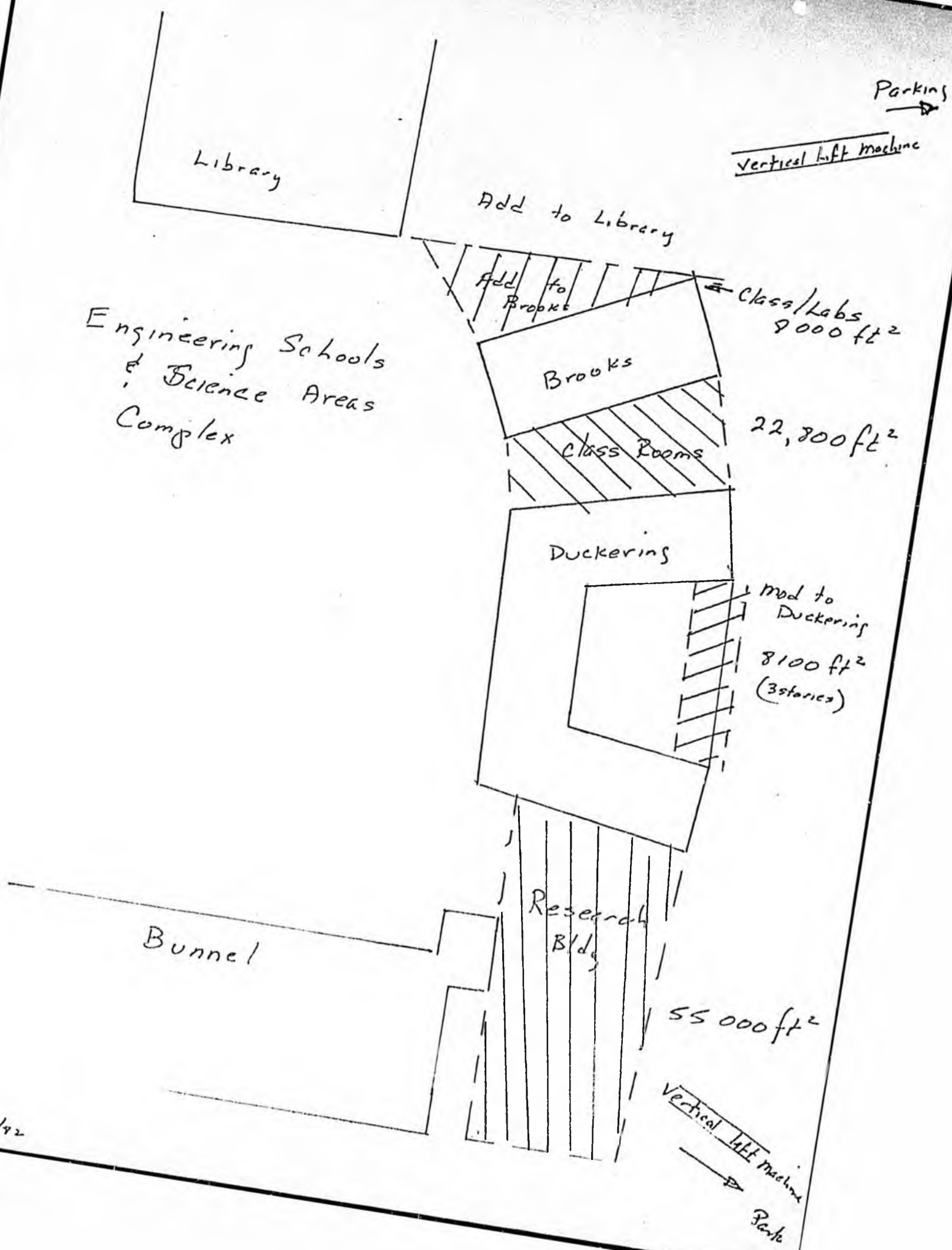
The laboratory equipment budget needed by existing programs for 1981-82 is about six times the 1980-81 level. Laboratories must be modernized to reflect rapid technological change.

A 38 percent increase in present full-time equivalent (FTE) faculty for 1981-82 is necessary in the three existing departments. These faculty are required as the programs are brought to the level of capability required to meet Alaska's needs and student enrollments increase to members justifying specialty talents. Faculty time divided between teaching and research further accentuates this need. Further efforts must be exerted to provide faculty time for professional development and maintenance of their capabilities.

The competency and currency of all faculty are of utmost importance to high School of Engineering standards. Travel support so crucial to faculty professional development should be immediately increased to about 300 percent of its original 1980-81 funding level.

A good blend of undergraduate and graduate students is necessary for healthy programs. This requires aggressive recruiting backed by tuition waiver and other scholarships and by teaching and research assistantships for promising graduate students.

The University of Alaska-Fairbanks School of Engineering budget requirements for a six year period are tabulated below. These are taken from Table II and include only equipment, services, supplies, salaries, student work-study, professional travel, graduate assistantships, and research seed support. Building costs and inflation are not included.



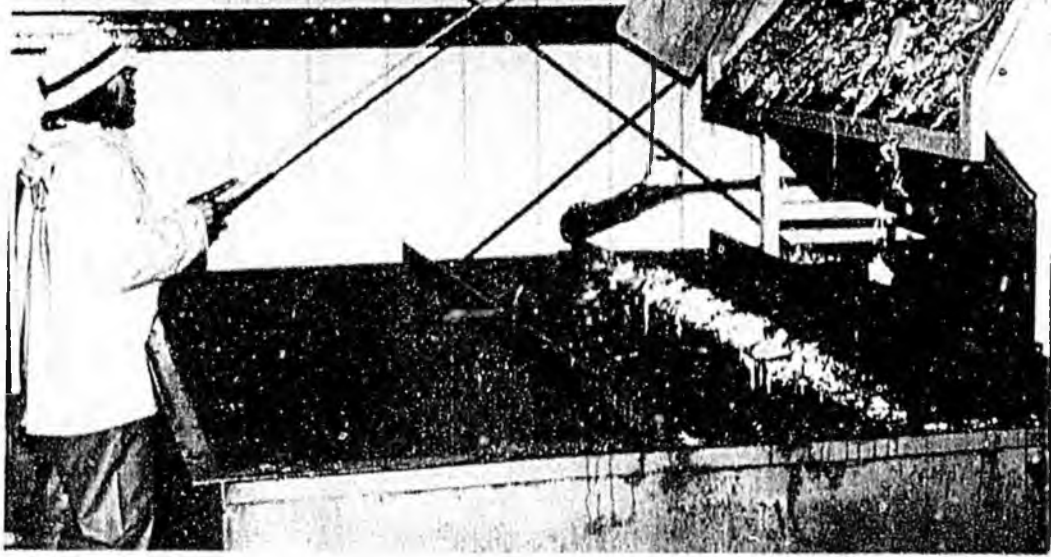
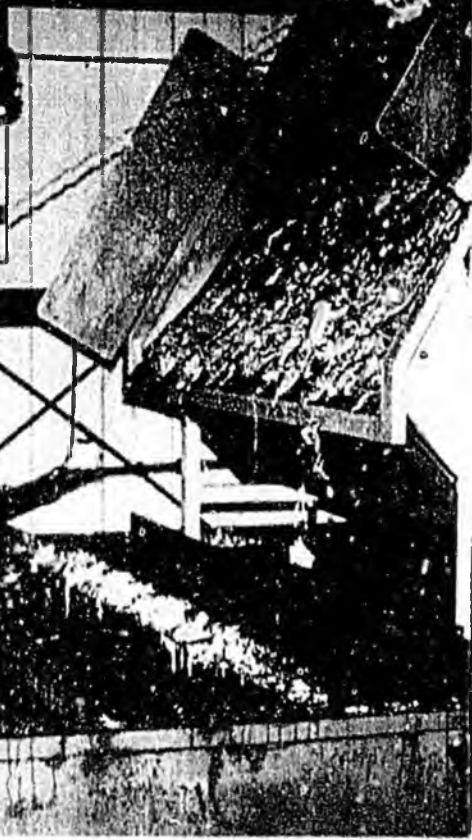
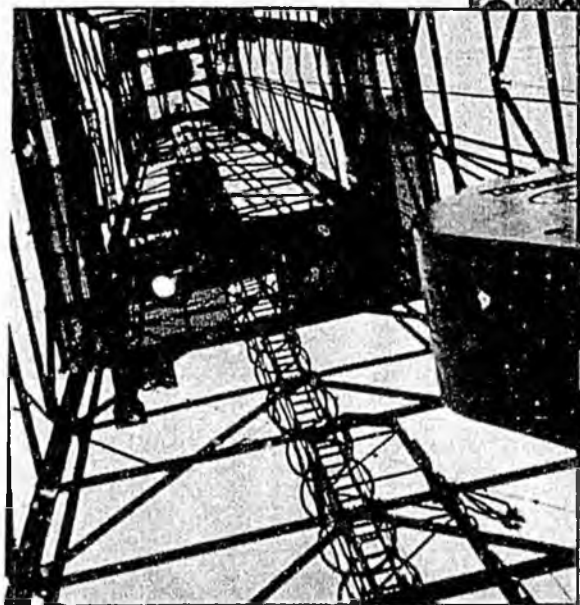
VSH 2/27/92



**Engineering...**

**Bridging the North Country.**

Photos on this page demonstrate (clockwise) ice engineering principles used to support a drill rig on a lake of the Interior, a Kodiak seafood processor's hydrosieve used to remove salmon chunks from wastewater and a drill rig on an oil platform in Cook Inlet.





Jay Barton  
President

UNIVERSITY OF ALASKA

FAIRBANKS ALASKA 99701

January 8, 1981


Fellow Alaskans:

The future of our State depends upon our ability to use modern technology to our best advantage. The ever increasing pace of development of new concepts and engineering applications demands that Alaska have an engineering education system second to none.

One of the first problems that requires immediate solution is that of space to carry on engineering research to solve problems unique to Alaska. The facility should be brought on line as rapidly as possible. The accompanying material describes the need.

To move ahead with a statewide system of engineering education it is necessary that we join together to accomplish this as the first phase of our overall program.

Sincerely,

  
Jay Barton  
President

## Facing tomorrow today.

**I**nnovators, builders, problem solvers and creators of new products - these are the engineers of the 80s. Engineers, like applied scientists, utilize scientific knowledge to develop needed products and to obtain solutions that are efficient, economical and dependable.

Throughout the North, accelerated resource development is occurring in response to world needs for energy, minerals, seafood and agricultural products. Much of the required engineering knowledge and personnel will be drawn from areas without an adequate appreciation for problems peculiar to the North. As a result many projects often incur unnecessary expense, delays and, in the end, less than optimum benefit for the investors and the citizens of the State. Nearly every project in Alaska demands special consideration of frozen ground, ice and snow, environmental impact, remote area logistics, communications, power costs and a host of building problems.

The University of Alaska is uniquely situated for northern engineering studies. The School of Engineering here capitalizes on its location by stressing northern problems and principles in its research and instructional efforts. Since 1931 UA has graduated over 600 students in the various engineering disciplines. However, the demand for engineers across the nation and in Alaska, in

particular, is growing at an insatiable rate. As a result, most organizations are forced to recruit some of their engineers from outside the State. In addition, expectations for structures suited to the North, for solutions to northern problems and for northern engineering expertise have also intensified. Yet, UA sorely lacks the facilities to accommodate more students and to be foremost in northern engineering research to meet the demands for improved living standards in Alaska.

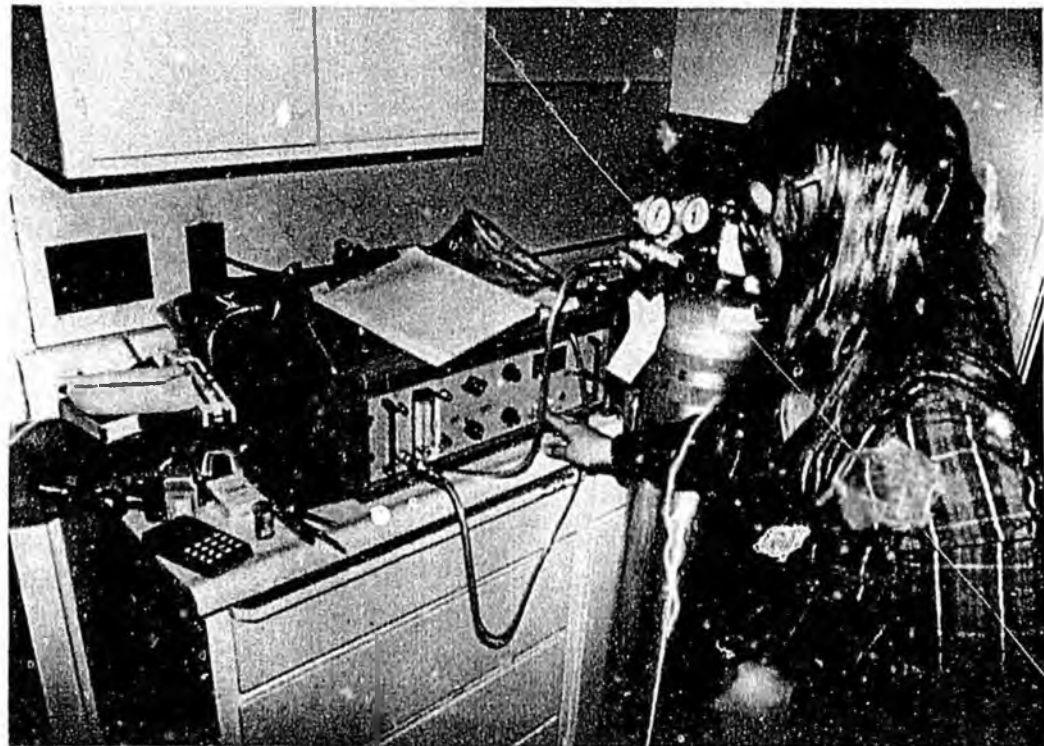
The School of Engineering of the University of Alaska is requesting a major northern engineering research facility to provide the means of solving problems of the North and transferring the information to tomorrow's generation and the State's professional community. The facility will provide a unique capability for carrying out research experiments in a controlled low-temperature environment where students, faculty and professionals can readily observe and participate. The results can be conveniently transferred to nearby problem areas in the State.

The State of Alaska would invest wisely to ensure that the University of Alaska is the leader in northern engineering research. We cannot afford to be less.

*Concern for loss of the United States' technological edge has produced discussions, studies and some grim findings. A February 1980 presidential report on science and engineering education determined that "there is virtual scientific and technological illiteracy in the population at large." At the same time, the National Science Foundation estimates that "one-third of the growth in the national income during the post WWII period flowed from advances in knowledge, particularly in the sciences and the new technologies to which they give rise." Engineering education according to the President's report is being severely hampered by obsolete equipment, inadequate facilities and a shortage of faculty in universities across the country. This is happening at a time when the U.S. is looking to research for answers to tomorrow's problems today. It is no different in Alaska and is, perhaps, more intensified here. This State is moving into the coming decades at a tremendous pace - a pace that our institutions of higher learning must recognize to adequately serve the needs of the Alaskan people.*

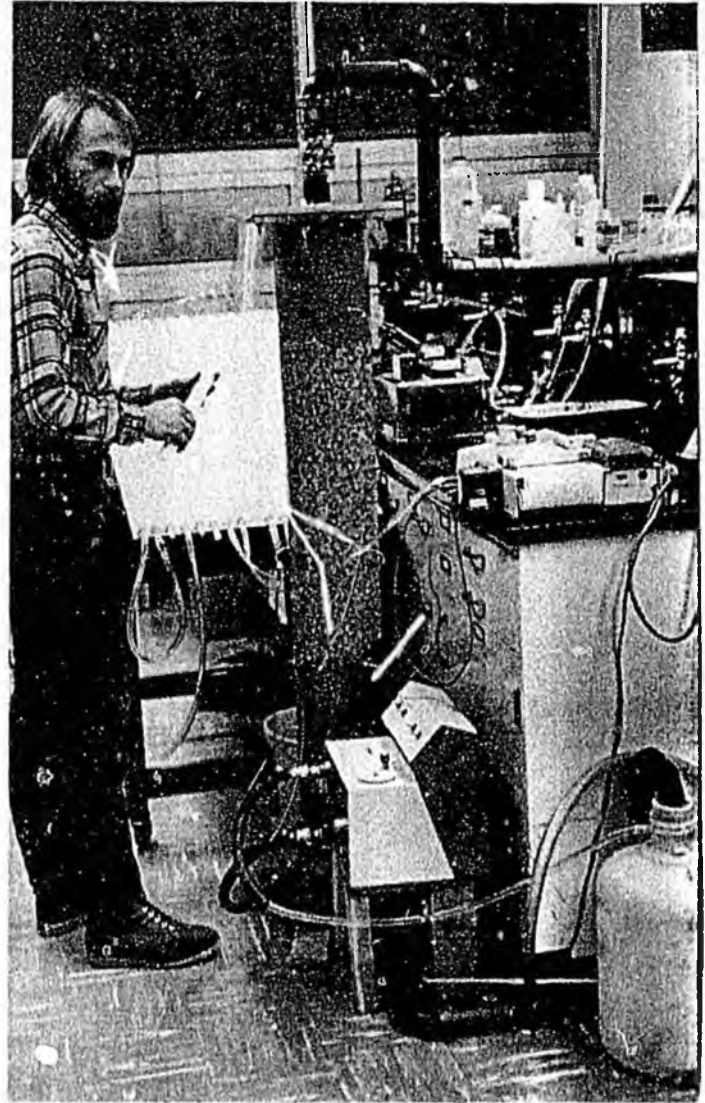
The University of Alaska should be preeminent in all facets of northern engineering. We should serve as the center for conducting and coordinating research and for disseminating the results of engineering research throughout the State of Alaska and the nation. The 1979 accreditation team of the Accreditation Board of Engineering and Technology strongly urged applied research efforts to be integrated into the School of Engineering. But major areas of research already underway at UA are hampered by insufficient space, inadequate equipment and outdated facilities. Engineering research is the direct application of science. Because the UA School of Engineering is closely allied with nationally and internationally recognized science-oriented institutes, UA engineers have the advantage and opportunity of augmenting the practical solutions to daily engineering problems with the theoretical research of the institutes. This benefits our engineering students.

In the last 20 years, the UA School of Engineering has had more requests for graduates than the available number of graduates from civil, electrical or mechanical engineering programs. In fact, the School continues to place all of its graduates who are actively seeking employment. Two-thirds of these graduates are still working in Alaska. Sensitive to the needs of rural Alaska, the School has given courses from Nome to Ketchikan to Prudhoe Bay. Special seminars are regularly held to keep the working engineer current. In FY80 the State recognized engineering research as separate from research conducted through the institutes and appropriated \$220,000 to the School of Engineering. Much of the ongoing research has been developed in conjunction with the Alaska Department of Transportation and Public Facilities (DOT/PF). Such close cooperation is typical of UA's research relationship with other state and federal agencies. Many of the projects currently conducted by DOT/PF provide students with examples of some engineering solutions to everyday problems.



The proposed engineering facility will greatly enhance UA engineering research efforts as well as further our competitiveness to attract top-notch faculty and to be foremost in northern engineering.

While strengthening traditional programs, UA is moving in new directions that reflect an awareness of industry demands in this State. New engineering courses are being introduced to assist the fishing and timber industries. The future of the petroleum engineering program will rely on a quality School of Engineering.



Research to date is assisting a wide range of the State's industries. For example, the petroleum industry - the thermal design of the pipeline is clearly an engineering marvel that has met the environmental challenge. The construction industry has benefited from engineering research through equipment development, frozen soils design, river and ice crossing studies and building design. The transportation industry is highly dependent on answers to frost heave problems as pavements, bridges and airports continue to be built. Important to the fishing industry is the engineering research looking at ways to process fish waste. Efforts are being directed toward the timber industry to increase the use of native Alaska tree species for structures. Agriculture will benefit from the energy utilization and soil moisture studies being conducted. And, the ice fog suppression research is sorely needed by interior Alaskan cities.

This is only the beginning. Extensive research is required to find answers to the many unresolved questions of the North. Moreover, enrollment is on the rise. There are over 200 declared engineering majors at UA and that number is likely to increase as incoming students see an attractive future in engineering. Enrollment increases will further impede engineering research as teaching labs, now shared by research, become fully utilized for instruction displacing research.

The proposed facility is a solid commitment to engineering education in Alaska and assures Alaskans a better future. Year-round research on frozen soils, ice and low temperature performance of lubricants and equipment will be possible.

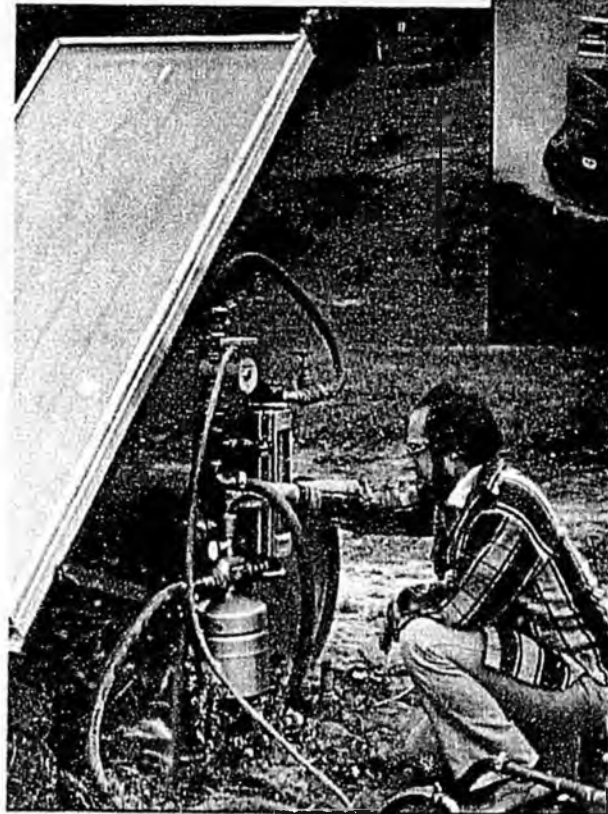
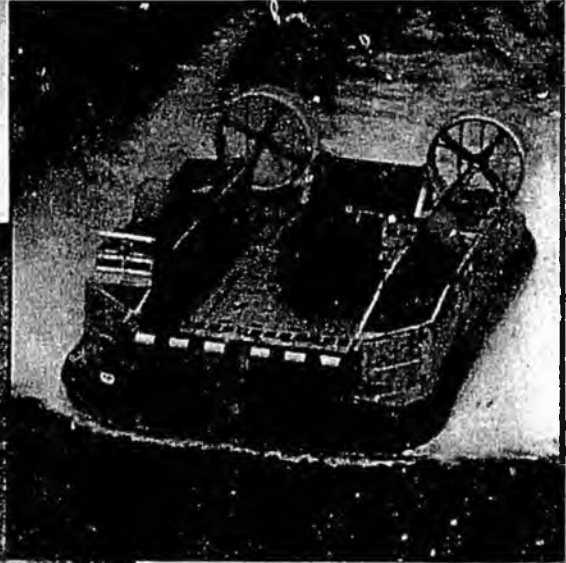
The northern engineering research facility will house a unique collection of laboratories and equipment designed to focus on problems of northern engineering. Of the total 50,000 square feet of total space over 30,000 will be allotted to research experiments. Several of the research laboratories are listed below. In nearly every case they will be one of only a few similar laboratories in the world:

The main research areas include:

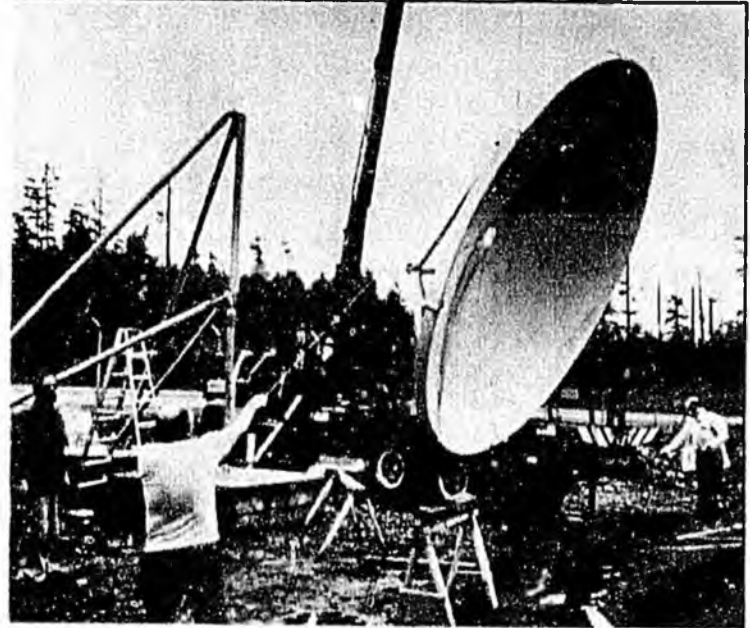
- ice-sediment hydraulic flume
- ice modeling basin
- frozen soil laboratories
- ice and engineering materials testing
- structural member testing
- communications and electrical power
- mechanical and lubrication laboratory
- electrical equipment and frozen soil field sites
- wind tunnel laboratories

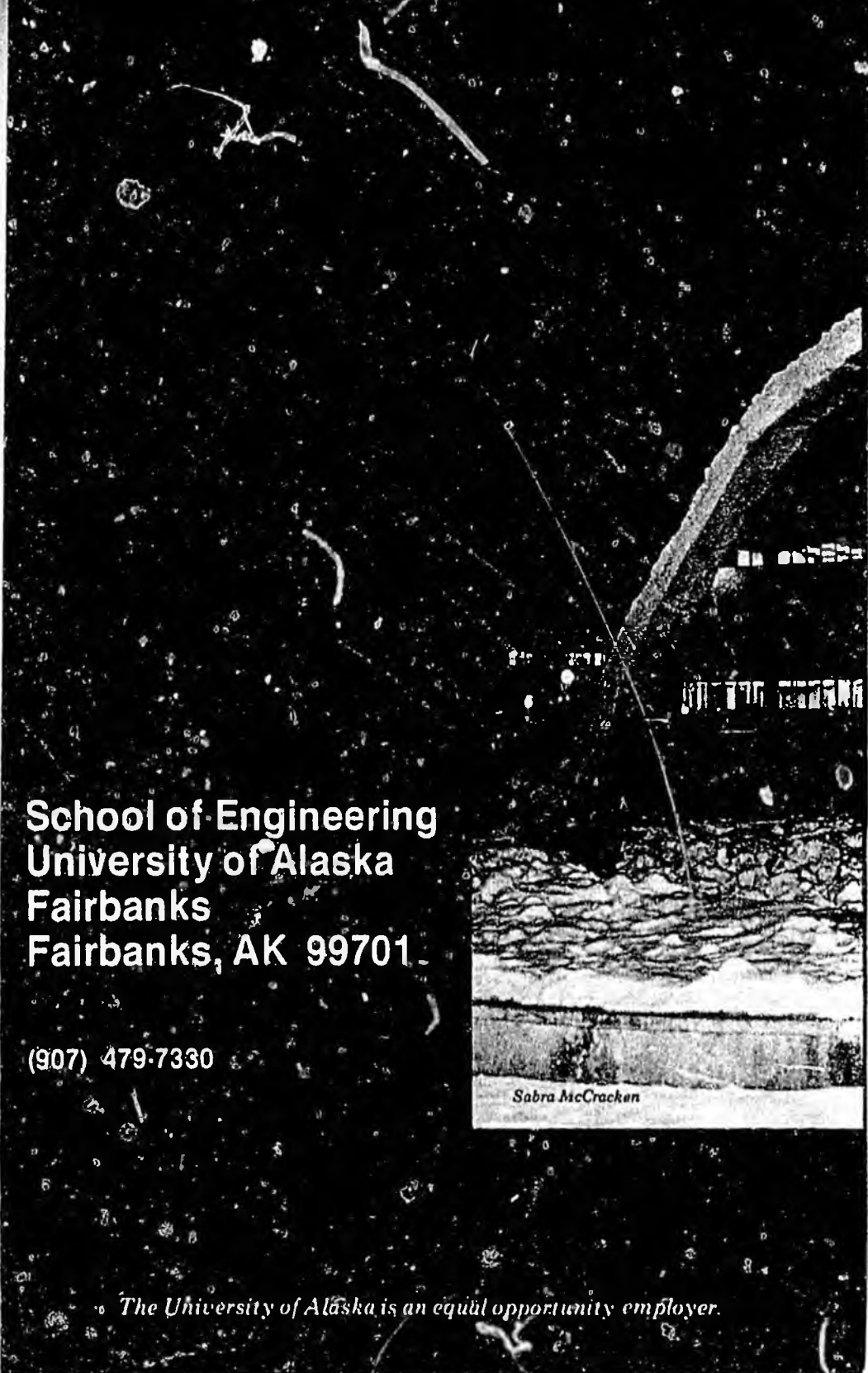
The remainder of the building will be used by support facilities and required service space.

The UA School of Engineering has been responsive to the present needs of the State. This proposed facility will ensure continued responsiveness and facilitate a more economical, efficient and quality lifestyle for the people of the North country.



Above: DOT/PF is currently engaged in hydrofoil and air-cushioned vehicle research.  
Left: Energy research at UA includes the use of solar collectors in subarctic Alaska.  
Below: Erected in Sitka, this satellite ground station is one of many in communications-conscious Alaska.





**School of Engineering  
University of Alaska  
Fairbanks  
Fairbanks, AK 99701**

**(907) 479-7330**

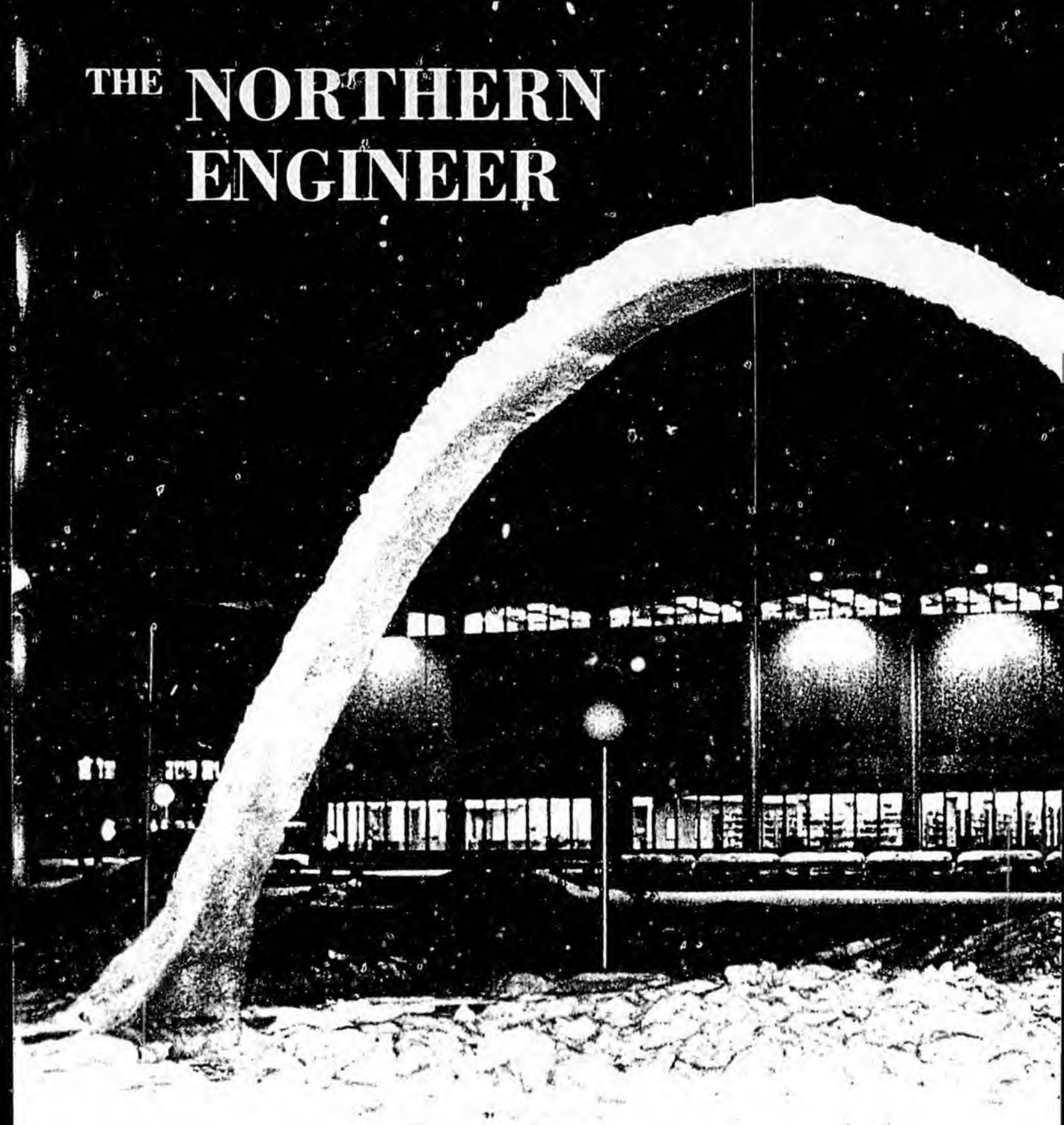
*Sabra McCracken*

*The University of Alaska is an equal opportunity employer.*

NOTE REGARDING THE FOLLOWING FRAME ON MICROFILM:

COMPLETE DOCUMENT IS AVAILABLE IN ORIGINAL FILES  
IN ALASKA STATE ARCHIVES. TITLE PAGE ONLY HAS  
BEEN FILMED.

# THE NORTHERN ENGINEER



A PUBLICATION OF  
THE GEOPHYSICAL INSTITUTE  
UNIVERSITY OF ALASKA  
VOLUME 13, NUMBER 3  
FALL 1981

**Research at the UAF  
School of Engineering**

applied science & technology in the north

S

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8

COMMITTEE REPORT  
SENATE

1/29/82

Finance

FURTHER:

Date:

3-15-82

Mr. President:

The Committee on HEALTH, EDUCATION & SOCIAL SERVICES has had SB 698

state reimbursement of health facilities for medical assistance provided to needy persons

under consideration and (a majority of the committee) (the committee) reports it back with the following recommendations:

- do pass  do not pass
- do pass with attached amendments(s)
- replace with CS for \_\_\_\_\_  same title  
 new title
- and recommends \_\_\_\_\_
- AND attaches a "Letter of Intent"  New Fiscal Note
- reports it back without recommendation
- referred to the \_\_\_\_\_ Committee

MEMBERS SIGNING  
DO PASS

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

MEMBERS HAVING  
OTHER RECOMMENDATIONS:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

CHAIRMAN

POSITION PAPER  
Senate Bill 698

An Act authorizing State reimbursement of health facilities for medical assistance on the basis of prospectively determined rates.

Senate Bill 698 would require that Medicaid and General Relief Medical (GRM) reimbursement for services provided by health facilities be based on a prospective determination of reimbursement.

Under present State and federal statutory language, prospective reimbursement is an optional method of payment.

Overview

The current system of reimbursing health facilities for services to provide Medicare, Medicaid, and GRM beneficiaries is retrospective in nature. That is, health facilities are paid for their services based on a cost report submitted after the services have been provided and after the end of each facility's fiscal year. The Medicare intermediary (Blue Cross) and the Department (as the agency administering the Medicaid and GRM programs) review the year-end cost reports and pay the facilities the lower of allowable costs or charges. During each year the intermediaries pay the health facilities an interim rate based on the prior year's cost report.

In response to this situation, approximately thirty-four states have instituted a prospective system of reimbursement for nursing home services under Medicaid, and sixteen states have instituted a prospective system of reimbursement for hospital services under Medicaid. These prospective systems have taken many forms, each state's structure a little different. However, they share the same philosophical purpose: "to encourage economy and efficiency, and to establish a uniform system of accounting, budgeting, and reporting in determining a health facility's future reimbursement."

SB 698 proposes a prospective reimbursement system for both hospitals and nursing homes under Medicaid and GRM. Less than ten states have both hospital and nursing homes under Medicaid and GRM. Less than ten states have both hospital and nursing homes covered under some type of prospective reimbursement system.

Department's Position

The Department of Health and Social Services supports the concept of prospective determination of reimbursement. Major benefits of such a program are:

- 1) Standardization of health facility's accounting, reporting and budgeting.
- 2) Centralization of health facility operational data.
- 3) Reimbursement based on rates negotiated in advance of the fiscal year rather than after the fact.

4) Continual communication between the commission and health facility administrators on health care costs in Alaska.

5) Billing and payment simplification based on negotiated rates of reimbursement before services are provided, with no retroactive cost settlement.

I. Adequate Program Funding

While Senate Bill 698 would authorize, if passed, a prospective method of setting health facility rates it does not and cannot insure that there will be adequate Medicaid and GRM funds to meet the need based on rates approved by the commission. Therefore, the problem will always exist that the rates established prospectively by the commission may be greater than the rate that the Medicaid and GRM programs can afford to pay based on budget available. This situation will undoubtedly be brought back to the legislature when a disparity occurs.

Fortunately, however, when this does occur the data available to document the disparity will be prepared by an independent commission responsible to the public to document true and reasonable health facility costs. Also, the data will be organized in a standard and uniform manner and will appropriately compare facilities and their costs.

II. Voluntary or Mandatory System

The Department has changed its approach to the topics of a voluntary vs. a mandatory prospective rate system. We are now willing to support the concept that prospective rate setting be tried with only Medicaid and GRM at this time. If the prospective system established is successful, we feel public and possibly health facility pressure will cause it to be expanded to other financiers of health care.

III. Purpose

The Department would like to suggest that the purpose statement in SB 698 be amended by adding the following language at page 1, line 14 after "meet": "their fair share of".

IV. Uniform Accounting, Budgeting and Reporting

This is a critical part of any prospectively-negotiated reimbursement system. SB 698 does not clearly require the establishment of a uniform accounting, budgeting and reporting process.

We would suggest the following language be used to establish a uniform accounting, budgeting and reporting process:

"(a) The commission, after study and in consultation with advisory committees, if any, shall establish by regulation pursuant to the Alaska Administrative Procedures Act, AS 44.66, a uniform system of accounting, budgeting, and financial reporting, including methods by which facilities

shall record their revenues, expenses, other income, other outlays, assets and liabilities, and units of service. All facilities shall adopt the system for their fiscal year period to be effective at the time and date as the commission shall direct. In determining the effective date for reporting requirements, the commission shall be mindful both of the immediate need for uniform reporting information to effectuate the purposes of this chapter and the administrative and economic difficulties which facilities may encounter in conversion, but in no event shall the effective date be later than one and one-half years from the date of enactment of this chapter.

"(b) In establishing uniform accounting, budgeting, and reporting procedures, the commission shall take in consideration:

"(1) existing systems of accounting, budgeting, and reporting presently used by health care facilities;

"(2) differences among facilities according to size; financial structure; methods of payment for services, scope, type, and method of providing services;

"(3) types of health care services provided; and

"(4) other pertinent distinguishing factors.

"(c) The commission shall, where appropriate, provide for modification consistent with the purposes of this chapter of reporting requirements to correctly reflect the differences among facilities and to avoid otherwise unduly burdensome costs in meeting the requirements of the uniform system of accounting, budgeting, and financial reporting.

V. Location of Commission

We would recommend the bill be revised to locate the commission within the Department of Commerce and Economic Development, and that it be clearly established as an independent commission much like the Alaska Public Utilities Commission.

VI. Certificate of Need and Revenue Sharing

The Department has also changed its position on this issue. We are willing to wait and give the prospective system as established in SB 698 time to organize and develop. At a later date we would discuss with the legislature the pros and cons of a interface between the rate commission, certificate of need and revenue sharing.

VII. Return on Equity Capital

The Department also has revised its positions on setting a specific amount in statute as the amount allowed for a return on equity. The amount established should set by the commission and will only be established after the issue of the method of determining equity is resolved.

Page 4

Conclusion

As stated earlier, The Department of Health and Social Services supports Senate Bill 698 and feels its passage is an important link in the State of Alaska's efforts to document its "fair share" part of the costs of health facilities. As public funds for health services drop further and further away from the seemingly insatiable health service needs, public efforts to determine true costs will be very important.

A rate commission will establish an independent and therefore hopefully objective body to review the data presented by health facilities and the Department of Health and Social Services and report to the legislature the funding issues involved.

Recommended by

 3/15/82

Rod Betit, Director  
Division of Public Assistance

Approved by



Helen D. Beirne, Commissioner  
Department of Health and  
Social Services

	<u>Positions</u>	<u>Salary Range</u>	<u>Salary Cost</u>	<u>Monthly Salary TOTAL</u>
<u>100</u> Personal Service				
PA Program Officer	(1)	21	3475	3475
Auditors	(2)	18	2838	5676
CT III	(1)	8	1482	1482
MA Administrator	(1)	17	<u>2640</u>	<u>2640</u>
				13273

$$(12466 + .23 \text{ benefits}) = 16325 \times 12 \text{ mos} = 195909.$$

200 Travel

201 Commission	10.0
(5 person, 4 meetings/yr)	
202 Training & Audit	<u>16.0</u>
	26.0

300 Contractual

310 Comm Telephone, postage	12.0
320 Printing	4.0
330 Rents/leases	15.0
340 Repair	1.0
360 Equip rental/copier	2.5
364 Typewriter	13.7
365 Telecommunications	5.0
(Commission public meetings)	
370 Data Processing	13.7
389 Contracts	
a) uniform budget	50.0
b) uniform acct	50.0
c) legal counsel	15.0
390 Misc	<u>1.0</u>
	182.9

400 Commodities 1.5

500 Equipment (office furniture) 6.0  
 FY83 TOTAL 375.5

THE LEGISLATURE OF THE STATE OF ALASKA  
TWELFTH LEGISLATURE

FISCAL NOTE

I. REQUEST

Bill/Resolution No. SB 698

Title An Act creating the Health Care Facilities Commission

Requested by \_\_\_\_\_ Date \_\_\_\_\_

II. FISCAL DETAIL

Agency Affected Health and Social Services

Program Category Affected --

BRU, Program, or Subprogram(s) Affected GRM Medicaid

(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86
100 PERSONAL SERVICES	0	196.0	220.0	247.0	276.0	309.0
200 TRAVEL	0	26.0	29.3	33.1	37.5	42.3
300 CONTRACTUAL	0	183.0	195.4	200.9	249.6	282.0
400 COMMODITIES	0	1.5	1.6	1.9	2.1	2.4
500 EQUIPMENT	0	6.0	1.0	0	0	0
600 LAND & STRUCTURES	0	--				
700 GRANTS, CLAIMS, ETC. GRM			0	0	0	0
TOTAL	0	412.5	447.3	502.9	565.2	635.7

FUNDING (Thousands of Dollars)

	412.5	447.3	502.9	565.2	635.7
GENERAL FUND					
FEDERAL FUNDS	0	0	0	0	0
OTHER (Specify Fund Source)					

POSITIONS

	0	5	5	5	5	5
FULL TIME						
PART TIME	0	-	-	-	-	-
TEMPORARY	0	-	-	-	-	-

III. ANALYSIS (See Fiscal Note Preparation Instructions, Section III)

A. Assumptions - Same as Detail Budget Instructions except a 13% yearly inflation figure is used.

B. Positions - See attached.

a. Uniform accounting system is necessary in order to compare costs of health facilities. Demonstration project in Washington state emphasized the need for uniform accounting.

b. Uniform budgeting system for reporting and projecting future expenditures which can then be compared with local, regional and national needs and trends. To establish a uniform accounting and budgeting system will take between 1 and 2 years for development and subsequent training of providers.

c. Lease data processing equipment and time from the Department of Administration for forecasting and analyzing health data.

d. Dollar figure in claims represents the cost to the Medicaid program due to the switchover from retrospective "cost" system. See attachment.

IV. DATE \_\_\_\_\_

PREPARED BY \_\_\_\_\_

AGENCY Health and Social Services/DPA

Original: Legislative Finance

cc: Budget and Management

Prime Sponsor (First Legislator Named)

	<u>Positions</u>	<u>Salary Range</u>	<u>Salary Cost</u>	<u>Monthly Salary TOTAL</u>
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	<u>182.9</u>

400 Commodities 1.5

500 Equipment (office furniture) 6.0  
FY83 TOTAL 375.5

The following tables show the increase or decrease in cost that can be expected if a prospective system similar to S.B. 698 is adopted. This bill allows costs which are currently not allowed under Medicare principles.

TABLE I\*

Long Term Care Cost Projections

Medicaid n = 15.2	Historical Cost	Prospective Rate System (-3%)	State Budget at 15% Annual Budget	Prospective vs. Historical	Prospective vs. State Budget
81 base	17073.0	17073.0			
82*	19668.0	19668.0			
83	22657.0	22067.0	20896.4	(590.0)	1170.6
84	26101.0	24759.0	24030.9	(1342.0)	728.1
85	30068.0	27780.0	27635.5	(2288.0)	144.5
86	34638.0	31169.0	31780.8	(3469.0)	(611.8)
87	39904.0	34971.0	36547.9	(4933.0)	(1576.9)
<u>GRM</u>					
n = 15.2					
81 base	449.4	449.1			0
82	568.1	568.1			0
83	654.5	637.4	501.1	(17.1)	136.3
84	753.9	715.2	576.3	(38.7)	138.9
85	868.5	802.4	662.7	(66.1)	139.7
86	1000.5	900.3	762.1	(100.2)	138.2
87	1152.6	1010.2	876.4	(142.4)	133.8

\* n was derived from FY80 and FY81 PBA expenditures.

TABLE II

Hospital Cost Projections

Medicaid n = 20.4	Historical Cost	Prospective Rate System (-3%)	State Budget at 15% Annual Budget	Prospective vs. Historical	Prospective vs. State Budget
81 base	9010.0	9010.0			
82**	10848.0	10848.0			
83	13061.0	13061.0	11392.9		1668.1
84	15725.0	15253.3	13101.8	(471.7)	2151.5
85	18933.0	18365.0	15067.0	(568.0)	3298.0
86	22795.0	22111.2	17327.1	(683.8)	4784.1
87	27445.0	26621.7	19926.2	(823.3)	6695.5
<u>GRM</u>					
n = 20.4*					
81 base	3890.0	3890.0			
82	4683.0	4683.0			
83	5639.0	5639.0	4548.0		1091.0
84	6789.0	6585.3	5230.2	(203.7)	1355.1
85	8174.0	7928.8	6014.7	(245.2)	1914.1
86	9841.0	9545.8	6916.9	(295.2)	2628.9
87	11849.0	11493.5	7954.4	(355.5)	3539.1

\* See Appendix 1 for derivation of n.

\*\* During the first year of prospective budgeting, costs will increase 10%.

THE FY81 BASE FIGURE WAS DERIVED FROM THE PBA SYSTEM.

The n for LTC was computed from DPA expenditures for FY80 and FY81.

The n for Hospital was computed using AHA Hospital Statistic (See Appendix 1) for expenses per adjusted admission from 1975 to 1980.

M E M O R A N D U M

TO: Medical Care Advisory Committee  
FROM: Alaska State Hospital Association  
DATE: December 3, 1981  
RE: Prospective Rate Negotiation System

As you know, the Alaska State Hospital Association has decided to propose legislation for the implementation of a prospective rate negotiation system. A draft of the Association's proposed legislation will shortly be available. It will be based upon, and will reflect, the following principles:

1. Health care institutions must be financed at a level that supports the health objectives of the community.

2. The community must meet the financial requirements of its health care delivery system, and the providers must accept the responsibility for the system's proper planning and management.

3. The financial requirements that must be met are those that are not only necessary to meet current operating needs, but also sufficient to permit replacement of the physical plant and to allow for changing community health and patient needs and educational and research needs, as well as other needs necessary to the institutional provision of health care services.

4. Prudent management to insure institutional financial stability requires that there be a realistic appraisal of current operating requirements and operating margin.

5. Current operating requirements include the following:

5.1. Patient care.

MEDICAL CARE ADVISORY COMMITTEE

December 3, 1981

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5.2. Patients who do not pay.

5.3. Education.

5.4. Research.

6. The operating margin will provide necessary funds for the following:

6.1. Working capital requirements; financial stability is dependent upon having sufficient cash to meet current obligations as they come due.

6.2. Capital requirements necessary to finance necessary changes, such as renovations and repairs, replacement of plant and equipment, expansion and new technology.

6.3. For investor-owned institutions, a reasonable after-tax return on their owners' equity sufficient to attract and compensate shareholders.

7. In order for the community to provide proper financing for its health care delivery system, it is necessary that rates of reimbursement to health care facilities by the Medicaid and General Relief-Medical programs be prospectively negotiated so that the appropriate and equitable planning, utilization and management decisions can be made.

8. The prospective rate negotiation system should be implemented by statute. The system's elements should:

8.1. Be based principally upon the financial requirements outlined in this memorandum.

8.2. Include an independent medicaid budget review commission to implement the system, the decisions of which shall be subject to full judicial review.

8.3. Grant to the Department of Health and Human Services reasonable access to fiscal records of medicaid beneficiaries.

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REPRESENTING ACUTE, LONG TERM AND OUTPATIENT FACILITIES

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Alternate Trustee Delegate  
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Association  
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Central Peninsula Hospital  
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President  
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Juneau

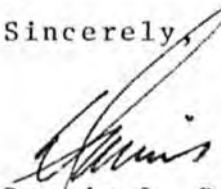
January 19, 1982

The Honorable Charles H. Parr  
State Senator  
State Capitol Building  
Juneau, Alaska 99811

Dear Senator Parr:

Attached please find the definition of Equity Capital  
which I promised.

Sincerely,



Dennis L. DeWitt  
President

DLD:bf  
Attachment

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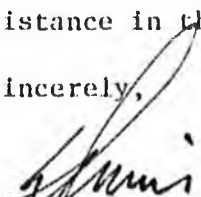
Attached is a refined draft of the State Medicaid Prospective Budget proposal. It was reviewed and adopted at our January 15, 1982 Executive Committee Meeting.

As you know, this Association is concerned that the outcome of this legislation not differ in substance from the input document. As a result of that concern, the Executive Committee has reserved for itself the negotiation of any principle put forth in this January 18, 1982 draft.

The attached draft does not contain a definition of equity as it is in process. Additionally, the final legislation may need to repeal existing regulation providing for medicaid and general relief-medical reimbursement. We have not addressed the need to extend conflict of interest statutes to include the commission nor whether the commission's procedures should be governed by the Administrative Procedures Act. We will leave these to your judgement.

Thank you for your assistance in this matter.

Sincerely,

  
Dennis L. DeWitt  
President

DLD:jp