

UAA Science Renovation – Phase 2 Narrative

A EXISTING BUILDING SITE

The existing building is situated along the campus “spine” and connected by elevated walkways to the engineering building toward the west (on the other side of University Drive) and the Parking Garage to the east. Minimal site development is required- a new east entrance, improvements for the existing north entrance and some utility service upgrades. Some existing trees will require removal on the west façade for installation of the new mechanical air handler.

B. EXTERIOR DESIGN OF THE BUILDING

This is an existing facility that has a design typical of the 1970’s, with similar material, massing, finish and color characteristics of some other campus buildings constructed at this time. The existing exterior siding material is beige, insulated vertical metal wall panels with “strip” bronze color aluminum framed / glazed storefront windows which create a facade that is monolithic and almost completely uniform in its character. The exterior design of this renovation is relatively modest in its extents; most of the existing exterior siding and storefront window system is to remain as-is. However- where renovations are to occur on the exterior, high-quality materials possessing sustainable qualities and having proven performance in sub-arctic northern climates have been selected with careful consideration with respect to their finishes and colors to complement both the building directly adjacent to the west (the Engineering Building), as well as the new Integrated Science Building, and also with respect to the overall colors that are present throughout UAA campus. The effect is one that reinforces the notion of an overall visual consistency as well as architectural diversity, while maintaining a unique position of architectural expression. Please also reference the photographic montage included on the Exterior Elevations and Material Board which serve to graphically illustrate this discussion.

The exterior wall siding improvements are essentially functional where they occur- new exterior siding is installed where existing window openings have been infilled to satisfy user programmatic needs, at building base locations along circulation routes where the existing metal panel siding sustained wear and damage, and at building entrances. A new entrance and sidewalk has been provided on the east elevation to facilitate user programs and the new interior plan, and existing entrances are to receive new insulated storefront glazed assemblies. A new entrance canopy and enclosed vestibule at the building’s existing north entrance provides weather protection, reduces heat loss and demarcates this primary entrance. It may also help to reduce pedestrian traffic across UAA Drive, offering an inviting entrance accessing the “Spine”. New horizontal yellow mullions are to be added to the existing aluminum storefront windows. This feature serves to tie this building to a repeating theme occurring throughout campus. Accents of yellow can be seen on the adjacent Engineering Building (yellow striping), on UAA signage, and indeed on many campus buildings. Finally, a new mechanical outside air intake is required, which will be located on the roof.

C. PRINCIPAL MATERIALS

The new primary exterior materials are a proprietary fiber-reinforced cementitious panel system manufactured by Swisspearl / Pacific Architectural Products and corrugated metal panel siding. There are two colors used for the proprietary fiber-reinforced cementitious panel system - green and gray. Green panels are used at discreet areas of existing window opening infill and provide an opportunity to introduce a green accent. Use of green accents may be observed through-out the campus and have been utilized both historically and in more recent projects. The grey panels are used at entrances and at wall base locations and are neutral in tone- simultaneously complementing the existing siding tone while possessing a tonal variation, thus achieving natural feel reminiscent of the materiality of the Integrated Science Building.

The corrugated metal panel wall siding is utilized where a large area of new exterior siding is required on the first floor of the west and south façades for infill of existing windows. (Although it is unusual to remove such great extents of exterior glazing, the Physics / Astronomy program requirements have absolutely strict controls on natural light.) Infill of existing windows does enable dramatic improvement of the thermal envelope, and also provides a unique opportunity to update the building's exterior appearance and "materially" tie it back to the Integrated Science Building (ISB). Corrugated /relief metal panel siding is used at the ISB, as well as other natural materials that possess strong texture and relief. The corrugated metal panel siding to be used in this renovation introduces a texture to the existing façade (which is mostly devoid of any texture or relief). This has the affect of helping to bring the existing building's aesthetics more in parity to newer buildings on campus, particularly the ISB. The color / finish selection for the corrugated metal wall panels is a high quality, durable Kynar finish that has variation in its color and overall is complementary in tone and hue to that of the existing storefront glazing- a bronze color with plum highlights. The variable tonal finish of the metal panels also engenders a certain natural feel- again a reference to the ISB material qualities, and also complementary in overall tone to the Engineering Building directly adjacent.

D. FUNCTIONAL RELATIONSHIP OF INTERIOR SPACES

The building's existing architecture is based on a modular building layout with a 5' x 5' grid throughout the building. This is not uncommon for the time of initial construction, and is similar to other UAA buildings on campus. It makes sense to maintain this module, since there is no technical or program reason for altering it. Therefore, when the program was developed most program elements were designed to fit within a space defined in increments of 5 feet. Fortunately, this provides a very workable building module for the programs that are to fit in the building. The program for the building has been prepared as a separate document- see the program document section of the schematic design binder.

The major program elements for the Geology and Physics/Astronomy departments are located on the first floor, along with storage space. The major program elements for Biology and Liberal Studies Integrated Science departments are located on the second floor, along with a Computer Instructional Lab, offices for Math and the aforementioned departments, and other support spaces. The layout also allows for student gathering areas to encourage and facilitate informal

learning and study outside of the classroom, and foster a sense of educational community within the facility itself.

E. MAJOR SYSTEMS

The existing exterior wall systems consist of insulated metal panels with metal furring on the interior side and gypsum wall board finish. Existing exterior windows are of aluminum frame with 1" insulating glass (2-ply). The windows are arranged as a "band" continuously around the west, south, and east sides of the building. Because of program changes, exterior natural light is not required in all of these spaces. (Natural light is not necessarily desirable in mass quantity in some spaces and explicitly problematic in other spaces.) The physics and astronomy labs in particular are sensitive to light- light is problematic when performing certain lab functions. Reducing the amount of exterior windows to satisfy program requirements also provides the single best opportunity for improving the heat loss performance of the building.

Some of the exterior window areas will be removed and infilled with new construction with a higher insulating value. Walls will consist of 6" metal stud framing with R-21 batt insulation within the cavity, and the exterior finish will be a metal panels installed over furring strips with 1 1/2" rigid insulation (R-7.5). This additional insulation will improve the energy performance in addition to providing a thermal break for the metals stud.

Existing doors and frames are of hollow metal construction and the paint is deteriorating. They will be removed and replaced with new thermally broken aluminum doors and frames.

The existing roof is an inverted membrane roof system with concrete pavers. The membrane itself is a built-up asphalt roof system with multiple plies. Destructive testing was not conducted to determine the number of plies. The roof has had some report leaks, but mostly associated with roof penetrations and flashing. The membrane is 30 years old and due for replacement within the next five years. The membrane itself is not in a state of imminent failure, it probably has a few years of life left. However, there are numerous patched areas around the roof, particularly with roof mounted mechanical equipment. These areas are suspect and the mostly likely locations for leaks.

Since the roof appears to have some remaining life, the approach will be to retain the existing membrane roof system where possible and simply repair and patch areas where known leaks have occurred. Also, new penetrations will be flashed and areas where any mechanical equipment is removed will be covered with membrane and re-insulated.

See additional descriptions of the structural, mechanical, electrical, and hazardous materials systems included within the Schematic Design Narrative.

F. BUILDING CODE REQUIREMENTS

The basic building code requirements are as follows:

Building Code: 2006 International Building Code (IBC)

Construction Type:	V-B Combustible, non-rated (Note, building is non-combustible, though not required by code)
Sprinkler system:	Not required for B occupancy, but included (Chapter 9). Inclusion of a sprinkler system relaxes other requirements of the code, such as corridor and stair construction and allowable area.
Corridor Construction:	Fire-resistive assembly not required, since the building has a sprinkler system.
Stair Enclosure:	Fire-resistive assembly not required since the stairs only connect two adjacent floors, and the building has a sprinkler system.
Separation of Occupancy:	No occupancy fire separation assemblies are required since the building's laboratories do not contain materials in excess of the quantities permitted in B occupancies.

G. BUILDING EFFICIENCY

The building on both levels is organized along a double loaded corridor, with program spaces on either side. By most standards, this is considered the most efficient use of space. In particular, it proved to be an appropriate organizational form for the specific program spaces for this facility.

The building is approximately 25,000 square feet on both levels. Note that there is a difference between this number and the square footage included in the building code analysis. A portion of this building is part of the Campus "spine" system, which connects this facility to the engineering building and the parking garage. The program is based on the area of the building that is actually used for the science department program. The area used in the building code analysis must include the total area.

Program spaces (excluding mechanical, electrical, custodial, restrooms, corridors, stairs, and student gathering areas) account for approximately 17,500 square feet. This gives the facility a net to gross ratio of 0.70. Corridor and vertical circulation space accounts for approximately 4,000 square feet (15% of the total building area).

I. CONFORMANCE WITH UAA MASTER PLAN

To the extent possible and relevant, the building will comply with the Key Design Guidelines delineated in the UAA Campus Facilities Master Plan (2004, and as revised in September 2009). The (existing) building's placement on site is established; its location and design are integrated into the "UAA Spine". Renovating this existing building reinforces the university's guiding design principle of accommodating and integrating sustainable growth. The renovations shall enhance the Spine by creating a modestly expanded commons seating area, renovated / handicap accessible restroom facilities, and a code compliant handicap-accessible elevator at the building's Spine interface. The renovations shall open-up the building's main corridors on each floor (currently closed off with doors) to the Spine and main level entry, serving to spatially expand both the Spine and the main level entry and provide an open, welcoming and natural flow to and from the facility. The building's primary entry points at ground level will also be renovated and enhanced with new door entry systems, a protective exterior canopy and arctic

vestibule at the north entry point, and the addition of high quality, durable and low maintenance exterior siding surfaces with proven arctic conditions performance- thus serving to create more welcoming and visible entry points from existing pedestrian circulation routes into both the facility and the Spine.

The building exterior will be renovated and modified using quality materials of known longevity in sub-Arctic conditions. The existing exterior siding shall remain, however some of the existing exterior window are to be infilled to meet program needs and requirements, and some areas of the exterior (at entries and along existing pedestrian routes) shall receive new wall finish to be installed over the existing. These new siding materials have been carefully selected to complement both the Engineering Building directly adjacent and existing campus design themes with respect to material, color and texture. New Rooftop mechanical equipment is to be set back from the roof edge to be less visibly intrusive. The overall effect serves to reinforce the campus visual consistency and architectural diversity. The exterior renovation work also includes new horizontal window mullions which help to give this monolithic building a more articulated façade and establish a more human scale- particularly at its west elevation which is set very close to UAA Drive. Existing exterior landscaping will be affected along the west elevation due to the renovation work there, but where affected it is to be replaced with similar plantings to maintain the existing characteristics.

Interior materials, systems and fixtures associated with the renovation have been selected for their reduced-use energy use performance, indoor environmental air quality enhancement, enhanced exterior thermal envelope performance, and for their incorporation of recycled material and rapidly renewable resource qualities where ever possible or feasible.

Other technical considerations required by the master plan and addressed in the design include upgrading the structure to current seismic standards and assuring adequate space within the building for HVAC and other equipment.

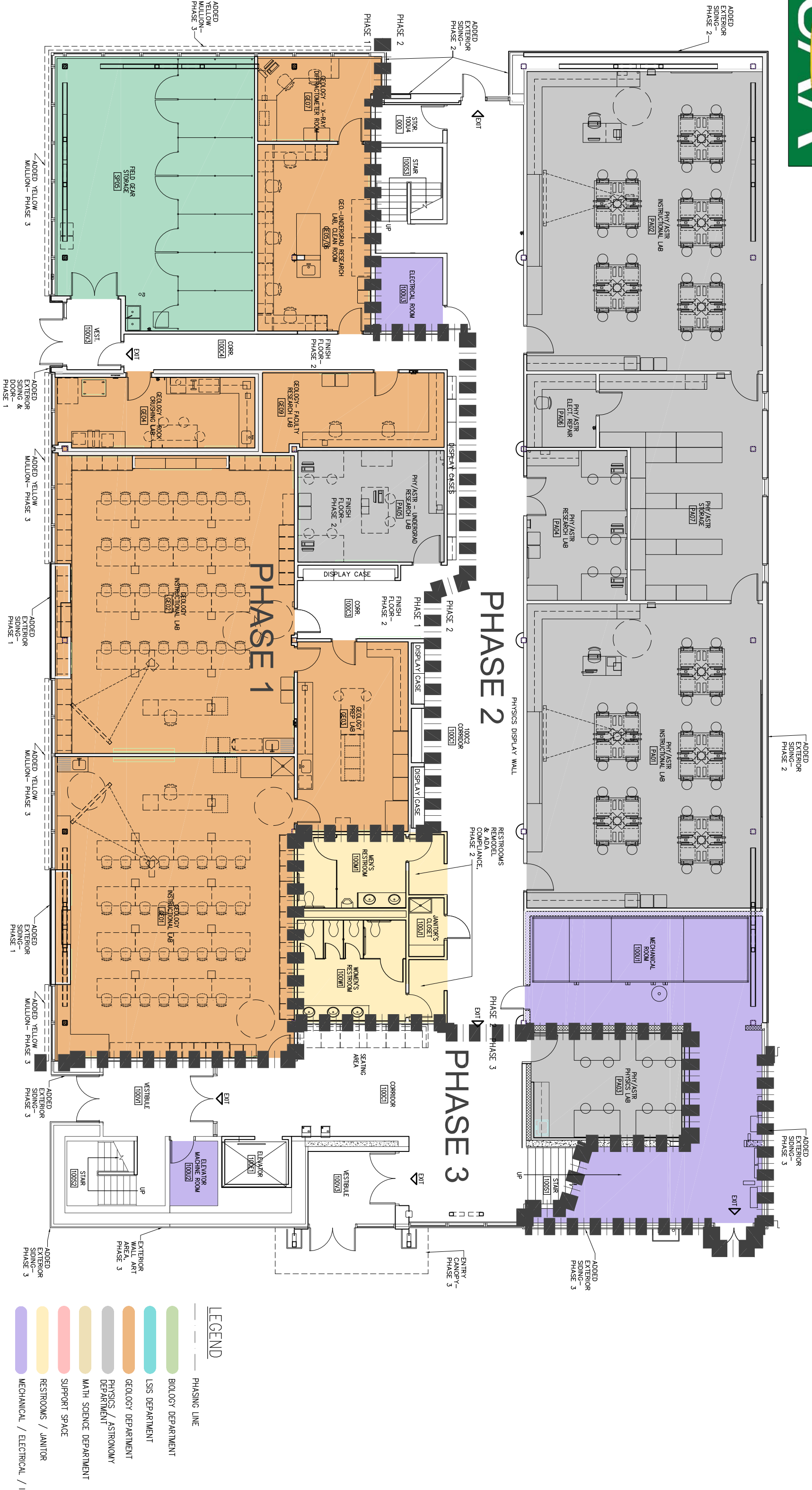
J. LIFE CYCLE COST/ENERGY MANAGEMENT

The primary tool used for analyzing this building's energy management is the US Green Building Council (USGBC) LEED Program. While the University is not mandated to comply with the USGBC guidelines, it is the best tool to measure the performance of the building based on a national standard. It is a more comprehensive standard than simply addressing a building's energy efficiency. It addresses environmental responsibility and reducing impact. It focuses on five categories including sustainable site development, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality.

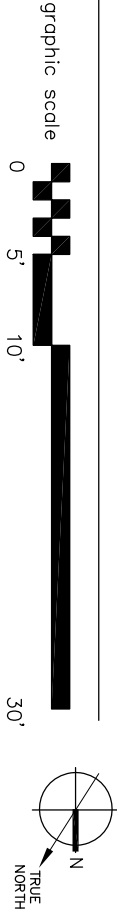
UNIVERSITY OF ALASKA			
Project Name: UAA Science Building Renovation - Phase 2			
MAU: UAA			
Building:	Science	Date:	8/23/2010
Campus:	Anchorage	Prepared by:	FP&C
Project #:	09-0015-2	Acct #:	564303/564310/564324
Total GSF Affected by Project:	27,166	5,917	14,347
	FPA Budget	SDA Budget	SDA Budget
PROJECT BUDGET	Full Project	Phase 1	Phase 2
A. Professional Services			
Advance Planning, Program Development	\$ 50,000	\$ 50,000	\$ -
Consultant: Design Services	\$ 720,000	\$ 820,000	\$ 411,000
Consultant: Construction Phase Services	\$ 200,000	\$ 50,000	\$ 200,000
Consul: Extra Services (List: Hazardous Materials)	\$ 80,000	\$ 20,000	\$ 30,000
Site Survey	\$ 30,000	\$ 5,000	\$ -
Design for Phase 3	\$ -	\$ -	\$ -
Special Inspections	\$ 80,000	\$ -	\$ 10,000
Other (List: _____)			
<i>Professional Services Subtotal</i>	\$ 1,160,000	\$ 945,000	\$ 651,000
B. Construction			
General Construction Contract(s)	\$ 7,800,000	\$ 1,400,000	\$ 4,460,000
Other Contractors: (List: _____)			
Construction Contingency	\$ 936,000	\$ 168,000	\$ 489,000
<i>Construction Subtotal</i>	\$ 8,736,000	\$ 1,568,000	\$ 4,949,000
<i>Construction Cost per GSF</i>	\$ 322	\$ 265	\$ 345
C. Building Completion Activity			
Plan Review Fees/Permits	\$ 174,720	\$ 20,000	\$ 20,000
Equipment	\$ 262,080	\$ -	\$ -
Fixtures	\$ -	\$ -	\$ -
Furnishings	\$ 394,444	\$ -	\$ -
Signage not in construction contract	\$ -	\$ -	\$ -
Move-In Costs	\$ 262,080	\$ 7,000	\$ 10,000
Art	\$ -	\$ -	\$ -
Other (Interim Space Needs or Temp Reloc. Costs)	\$ -	\$ -	\$ -
Maintenance Operation Support	\$ -	\$ 42,000	\$ 10,000
<i>Equipment and Furnishings Subtotal</i>	\$ 1,048,320	\$ 69,000	\$ 40,000
D. Owner Activities and Administrative Costs			
Project Plng, Staff Support	\$ -	\$ -	\$ -
Project Management	\$ 436,800	\$ 62,500	\$ 360,000
Misc. Expenses: Advertising, Printing, Supplies, Etc.	\$ 68,880	\$ 1,100	\$ -
<i>Administrative Costs Subtotal</i>	\$ 505,680	\$ 63,600	\$ 360,000
E. Total Project Cost	\$ 11,450,000	\$ 2,645,600	\$ 6,000,000
<i>Total Project Cost per GSF</i>	\$ 421	\$ 447	\$ 418
F. Total Appropriation(s)	\$ 11,400,000	\$ 2,645,600	\$ 6,000,000



UAA SCIENCE RENOVATION PROJECT



First Floor



900 W. 5th Ave, Suite 403
Anchorage, Alaska 99501-2029
907.272.3567 • 907.271.1732 fax
191 E. Swenson Ave, Suite 203
Wasilla, Alaska 99654-7025
907.373.7505 • 907.376.5166 fax



The floor plan is divided into three main sections: Phase 1 (top), Phase 2 (middle), and Phase 3 (bottom). Phase 1 includes a large central area with a 'LSS TRADITIONAL INSTRUCTIONAL LAB' and 'LSS PREP LAB'. Phase 2 features a 'COMPUTER INSTRUCTION LAB' and 'LSS HIGH TECH INSTRUCTIONAL LAB'. Phase 3 contains a 'BIOLOGY COLLECTION ROOM' and 'BIOLOGY PREP ROOM'. The plan also shows various support spaces, restrooms, and an elevator. A legend at the bottom identifies the color coding for different departments and the phasing lines.

LEGEND

PHASING LINE

- BIOLOGY DEPARTMENT
- LSS DEPARTMENT
- GEOLOGY DEPARTMENT
- PHYSICS / ASTRONOMY DEPARTMENT
- MATH SCIENCE DEPARTMENT
- SUPPORT SPACE
- RESTROOMS / JANITOR
- MECHANICAL / ELECTRICAL / IT

MECHANICAL / ELECTRICAL / IT



UAA SCIENCE RENOVATION- EXTERIOR ELEVATIONS

SITE- NATURAL EDGES / FORMAL INFILL



- UAA Master Plan Primary Goals:
1. Make UAA a model for other northern universities.
 2. Accommodate and integrate substantial growth.
 3. Build quality facilities appropriate to the university that meets existing demands and relevant state needs.
 4. Celebrate the natural settings of each campus.
 5. Build a community of neighbors.

BUILT ENVIRONMENT- CAMPUS BUILDINGS



MATERIAL EXPRESSION PRECEDENTS-

LIGHT & DARK NEUTRAL HUES ACCENTED WITH GREENS AND YELLOWS: EXTENSIVE USE OF CONCRETE, METAL PANELS, TINTED GLAZED STOREFRONT / CURTAIN WALL; HISTORIC AND RECENT EXAMPLES OF MATERIALS EVOKING NATURAL EXPRESSIONS WITH SURFACE RELIEF.



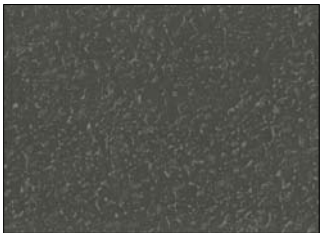
SCIENCE BUILDING RENOVATION EXTERIOR PALLETTE



a Existing Metal Wall Panel-
Smooth, slightly pebbled surface with beige / grey painted finish



b Existing Storefront Windows-
Frames: Anodized aluminum medium bronze frames
Glazing: Reflective bronze / thin thick glazing



f 78% Corrugated Metal Wall Panel:
Kynar AZP



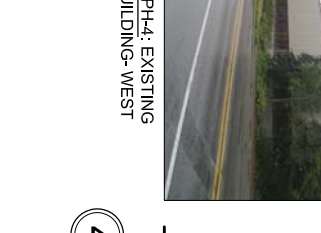
g Swiss Pearl Fiber Reinforced Cementitious Wall Panel: Kressiv Cement Gray



h Swiss Pearl Fiber Reinforced Cementitious Wall Panel: Reflex Green Lagoon



i Paint: Paint existing concrete column green (see elevations)

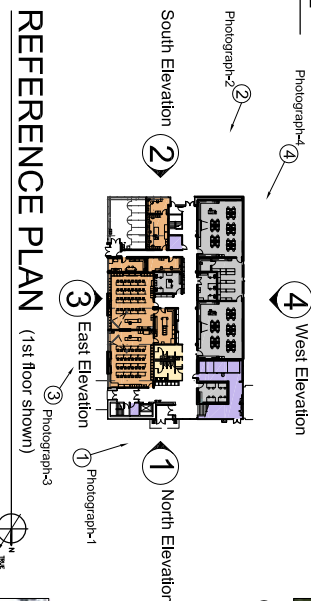


j Relocated Fresh Air Intake: Paint to match existing wall siding (see elevations)

- c** Storefront Windows / Doors-
(see elevations)
Frames: Anodized aluminum medium bronze frames
Glazing: clear glazing
- d** Storefront Windows Mullion-
(see elevations)
Horizontal member with yellow kynar paint finish
- e** Entrance Canopy-
(see elevations)
Painted Steel with Swiss Pearl facade / south finish

REFERENCE PLAN

(1st floor shown)



1 PHOTOGRAPH-1: EXISTING SCIENCE BUILDING- NORTH ELEVATION



2 PHOTOGRAPH-2: EXISTING SCIENCE BUILDING- SOUTH ELEVATION



3 PHOTOGRAPH-3: EXISTING SCIENCE BUILDING- EAST ELEVATION



4 PHOTOGRAPH-4: EXISTING SCIENCE BUILDING- WEST ELEVATION

