

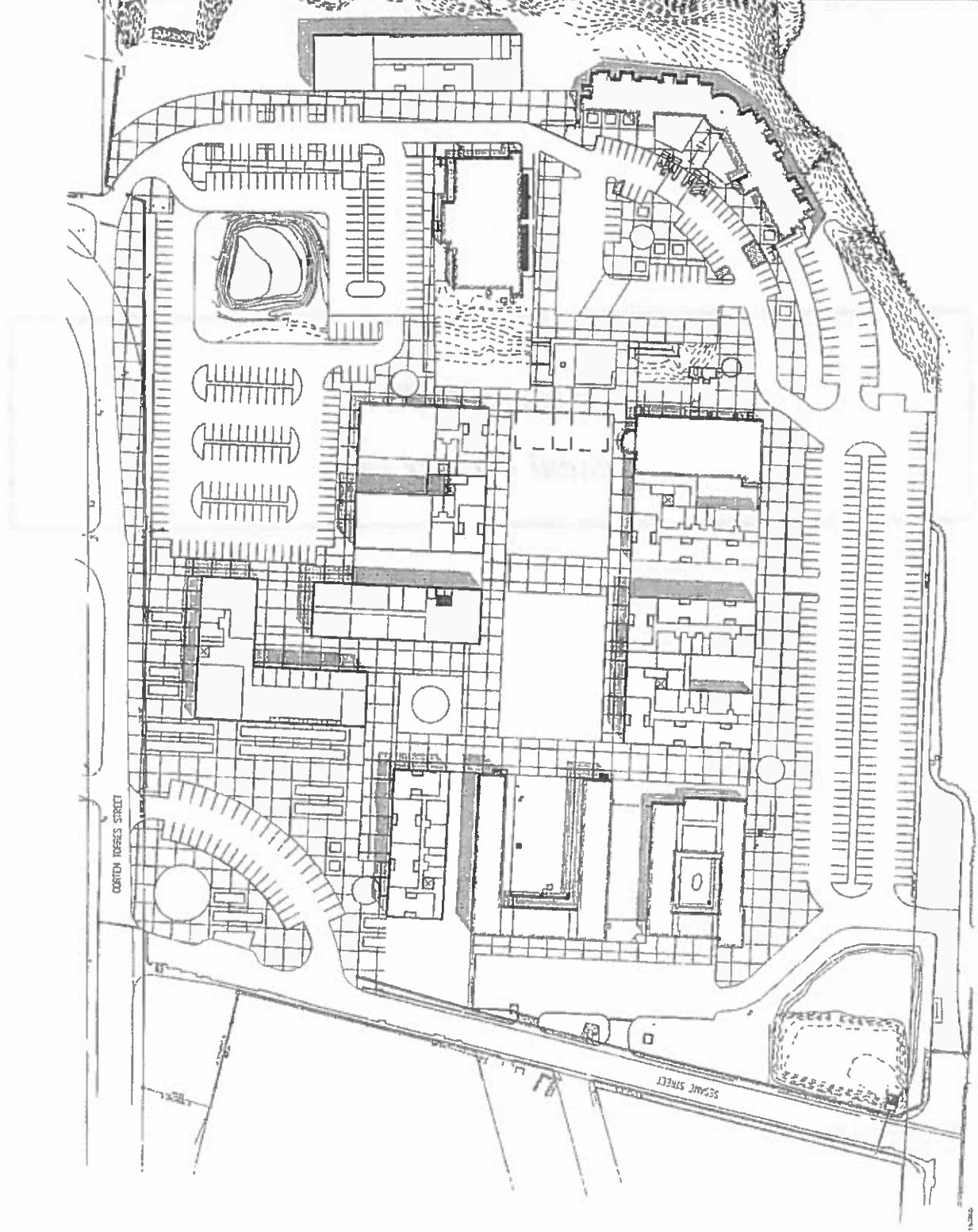
Appendix B
Physical Master Plan

Guam Community College Campus Master Plan

SEPTEMBER 2005

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Taniguchi Roth Architects



**Guam Community College
2005 PHYSICAL MASTER PLAN REPORT**

In March of 2005, TRMA was contracted to provide architectural planning services for GCC. The purpose of this 2005 Physical Master Plan is to map out the general growth of the campus facilities that are necessary to accommodate the College's anticipated needs over the next 15 years.

This Report consists of four sections.

Section 1: This section outlines some of the general background information about the campus location and buildings.

Section 2: This section describes the programmatic requirements for the existing campus programs and new programs, and also itemizes the existing spaces of the campus.

Section 3: This section describes the synthesis of the information from the previous sections into the Master Plan provides the description of each of the phases of the Plan.

Section 4: This section discusses the considerations of the Master Plan with regard to Leadership in Energy and Environmental Design (LEED).

Section 1

Introduction

Like any major institution, the Guam Community College requires a physical master plan to map out the growth of its campus. As the primary vocational institution on Guam and a secondary school, its needs have increased over the years to the point where the existing campus facilities have become insufficient. Growth in student population and the addition of new programs are changes that will continue as GCC responds to the demands of Guam's work force. As the schools curriculum and population grow, so too must the physical campus. Therefore, a strategy, a physical Master Plan, is needed for the growth and change of the campus facilities to ensure that they meet the schools needs and are representative of the character and identity of GCC.

The Master Plan's main objective is to build from the existing campus. Developing the campus is necessary, however it's an undertaking that can be costly if the development is entirely new construction with new infrastructure. In addition to cost, entirely new construction may also interrupt the school's operations. In effect, the optimal strategy is to develop the Master Plan to maximize the potential of the campus's existing facilities and current layout.

Site

The GCC campus site displays many physical characteristics. The campus is located on a 24-acre site. GCC is connected to Vietnam Veterans Highway (Route 10) by Corten Torres Street, which is the northern boundary of the campus. To the north and west of the campus is residential development with some small commercial uses along both Corten Torres Street and Sesame Street. To the east are outcroppings of limestone forest and beyond that is an ocean-side cliff. The south is bounded by limestone forest as well. The site elevation rises from west to east at a 5 percent slope approximately. One ponding basin is located at the northeast corner of the site and another is located at the southwest corner. Much of the site is undeveloped green open space with most of the buildings occupying the western portion of the site.

There are fifteen permanent buildings on the site along with several temporary buildings. Of the fifteen buildings, three are generally new

construction. The current administration building, which was originally intended to be housing, was constructed in the 1990's. The new Technology Center and the new Multi-use buildings are refurbishments completed within the last year. The other twelve primary buildings were constructed through the 60's, 70's, and 80's. All of the temporary buildings were constructed in the 60's. A building of note is the existing LRC building, which is also known as the Foundation Building and is the only building that was constructed in the 80's. Additionally, Bldg. 900 is currently under renovation.

The GCC campus is comprised of buildings of different construction. Almost half of the existing permanent buildings on the GCC campus are metal buildings. Buildings 100, 200, 300, 500, 600, 900, and the LRC are all pre-engineered metal buildings. Buildings A, B, C, and D, the Multi-use Bldg., the Technology Center, and the Administration Buildings are all concrete structures.

An analysis of the existing campus buildings and their layout reveals a strong organizing concept that the Master Plan should build upon. Based on the research of MCL, the oldest buildings on the campus are Buildings 100, 200, 300, 500, and 600. Shortly after these buildings were built, Building 800 (now demolished) was constructed. These early permanent buildings were organized around a central open space, the center of the campus. Subsequent Buildings A, B, C, and D were built and continued to define this central open space. When the old Administration Building (now the Technology Center), building 900, and the existing LRC were later constructed, available land and site topography were probably the controlling factors in their locations, because these buildings do not relate to the campus center created by the earlier campus buildings. The disconnection is reinforced by the vehicular access roads that run through the campus.

Section 2

Existing Space Analysis

GCC's enrollment information is another basis necessary for the Master Plan. The Guam Community College Programs are primarily the following:

- Apprenticeship
- Industry Certification and Diploma
- Degree Programs
- Secondary School

Table A shows the number of students enrolled in the various programs for the year 2004-2005. The number of enrollees shown per program indicates the number of students enrolled for either the fall or spring semester, whichever was higher. The total number of students for that year is 1959. Most of the College's students are involved in the Industry Certification and Degree Programs. According to the school's enrollment information, the three highest enrollments were for Adult High School, Medical Assisting and Computer Science, and the largest percentage of the enrollees was the undeclared students.

In view of the GCC curriculum and the school's enrollment information, TRMA determined the following:

- The general education courses (English, Science, Math) have the most classes.
- The five programs with the highest enrollments are:
 1. Adult High School (GED)
 2. Medical Assisting
 3. Computer Science
 4. Early Childhood Education
 5. Accounting

As GCC grows, these five programs and the General Education program should be identified as the curriculum that are in most demand.

Initial steps to address the increasing needs of the College have occurred with the recent completion of the Technology Center and the Multi-use Building, and the renovation of Building 900. Recent needs have been identified by GCC which include:

- A Student Center
- Increasing the capacity of the LRC
- A Criminal Justice Building
- An Allied Health Building
- A Crime Lab

As part of the preliminary work of the GCC Master Plan, TRMA conducted working sessions to determine building program needs for the proposed buildings. Table B itemizes the approximate areas of the existing GCC facilities. The proposed buildings and anticipation of 15% growth within the next 15 years will increase the building area of the campus by approximately 75%.

Section 3

Master Plan Concept

The concept of the Master Plan is to reemphasize the original layout of the campus and to connect it to the site given the existing site conditions. There are several issues taken into account for the Plan:

- Creating a "Main Entrance" to the campus to connect the campus to its surroundings.
- Connecting all parts of the campus.

On a larger scale, the School needs a strong connection to the site. This can be done in terms of relation to Corten Torres Street, which is the main thoroughfare that connects GCC to Vietnam Veterans Highway. Where Corten Torres Street meets GCC is where that entrance should be. Within the campus, a series of open spaces with covered walkways and landscaping will be created to unify the campus, with the emphasis on creating a pedestrian promenade from the main entrance through the center of the campus to the Administration Building.

Phasing

A piece-meal approach is taken in terms of the phasing of the Master Plan. The Master Plan will be comprised of phases that are not in completely sequential order and of generally small scale. The Plan's intent is for each phase to be completed without the completion of a previous phase. The order in which the phases are presented is considered the "ideal" scenario. For each phase where a second floor is added, an elevator and the required fire exits will be included in the building.

Phase 1A:

- Reconfigure the access road from Corten Torres Street to the Administration Building.
- Reconfigure the parking adjacent to the Technology Center to accommodate approximately 100 cars.
- Reconfigure the parking lot south of the Multi-use Building to accommodate approximately 225 cars.
- Add covering over open space between buildings 500 and 600: approximately 3500 s.f.

Phase 1B:

- Construction of the New Student Center Building; 2-story building, 11,000 s.f. per floor; pre-cast concrete walls and metal roof.
- Construct Plaza and Student Square, approximately 36,000 s.f.
- Student Center Program:
 1. Lounge/ Lobby—3400 s.f.
 2. Bookstore—1000 s.f.
 3. Rooms—1000 s.f., 9 ea.

4. Storage—800 s.f.
5. Restrooms—600 s.f.

Phase 2A:

- Construct Addition to LRC Building; 2-story, 11,000 s.f. per floor.
- Construct Entrance Plaza.
- LRC Program:
 1. Reading Area/ Collection—14,500 s.f.
 2. Computer Work Areas—1200 s.f.
 3. Computer Lab—2000 s.f.
 4. Group Meeting Rooms—200 s.f., 4 ea.
 5. Large Group Meeting Room
 6. Audio Visual Rooms—225 s.f., 2 ea.
 7. Staff Areas—2000 s.f.
 8. Coffee Bar—800 s.f.

Phase 2B:

- Construct Allied Health Building; 2-story, 11,000 s.f. per floor
- Complete Entrance Plaza.
- Allied Health Building Program:
 1. Classroom Module—2,400 s.f., 4 ea.
 2. Lecture Room—1200 s.f., 2 ea.
 3. Storage—1000 s.f.
 4. Restrooms—600 s.f.

Phase 3A:

- Refurbish Building 100; add second floor; pre-cast concrete wall panels; metal roof.
- Building 100 Program:
 1. Classrooms—1400 s.f., 6 ea.
 2. Offices—550 s.f., 4 ea.
 3. Restrooms—1000 s.f.
 4. Storage—1600 s.f.

Phase 3B:

- Refurbish Building 200; add second floor; pre-cast concrete wall panels; metal roof.
- Building 200 program:
 1. Classrooms—1400 s.f., 6 ea.
 2. Offices—550 s.f., 4 ea.
 3. Restrooms—1000 s.f.
 4. Storage—1600 s.f.

Phase 4A:

- Construct new Criminal Justice Building; 2-story building; 15,000 s.f. per floor.
- Criminal Justice Building program:
 1. Office area—2000 s.f.
 2. Classrooms—1200 s.f., 5 ea.
 3. Assembly area—2000 s.f.
 4. Computer labs—2000 s.f., 2 ea.
 5. Restrooms / Locker rooms—2400 s.f. total
 6. Crime lab—5000 s.f.

Phase 4B:

- Construct Addition to Building 600: 2,200 s.f. total

Phase 5A:

- Construct Maintenance Building, 10,000 s.f. total
- Construct Addition to Building 500: Approx. 2200 s.f.

Phase 5B:

- Refurbish Building 300: Add second floor; pre-cast concrete wall panels; metal roof, 11,800 s.f. total

Phase 6A:

- Construct Maintenance Building, 10,000 s.f. total
- Complete final landscaping, exterior covered walkways, and benches.

Section 4

Introduction

The GCC Masterplan project has incorporated LEED Principals in the design of its existing campus masterplan including site improvements, utility connections, roadways, walkways and related civil, structural, electrical, mechanical, plumbing and architectural systems to be located at the current Mangilao campus on Guam.

One of the primary LEED principals integrated is to reuse the footprints of several of the existing buildings and portions of the buildings themselves where feasible as we increase the campus spaces to meet the growing needs of the College.

- By re-using the footprints of the buildings the masterplan minimizes the disturbance of Greenfields (or virgin land).
- By programming to reuse portions of the existing building structure and shell the masterplan reduces the creation of debris which might otherwise clog the already overburdened landfills.
- Reusing footprints also integrates the use of existing utility and civil infrastructure.
- The masterplan as programmed reduces the amount of site disturbance, digging and trenching which reduces erosion and siltation of nearby waterways and storm drainage systems.
- The landscape program for the campus includes the use of landscape products that are indigenous to Guam or which have proven sustainability on Guam. The plant products recommended will not require any significant irrigation system which preserves water capacities.
- Landscaping is also being programmed for gathering areas and parking and driveway surfaces to help reduce Heat Islands at these locations.
- Building Forms were oriented and configured to reduce solar heat gain, where possible.
- The primary building material envisioned is concrete, the components of which are available within this region reducing the overland and overseas transport fuel/energy burden.

- Use of Concrete can also reduce post storm debris generated from typhoons which dismantle much non-concrete construction.

- The programmed reuse of several structures can also produce Brownfield advantages. Brownfield advantages occur when a reused site mitigates a known hazardous material. Materials that have been discovered onsite include Lead Paint, asbestos containing products and older non-compliant preservatives, paints, sealants and higher VOC compounds.
- The programs for the actual buildings are anticipated to maximize use of natural daylighting.
- Mechanical controls for personal environments will be strategically placed to reduce overall cooling loads. Additionally smaller (and more numerous) cooling zones will be designed into the buildings to allow for more efficient cooling of inhabited spaces.

Additional LEEDS strategies can be implemented that may affect first time costs but will reduce the lifecycle costs. Such strategies include:

- Carbon Monoxide monitoring
- Solar energy augmentation for campus power supply

Additional strategies that are being recommended to GCC which may are programs that the school could undertake to improve the campus sustainability.

- Recycling programs.
- Introduce a perks or awards program for carpooling, cycling or walking to school. Incentives to reduce the amount of single person vehicle use.
- Teaching a course or providing tours/showcasing sustainable design features.

Table A**Student Enrollment Fall 2008-Spring 2009**

AA in Culinary Arts	53
AA in Education	81
AA in Liberal Arts	101
Adult High School Diploma Pgm	89
AS Admin of Criminal Justice	41
AS in Accounting	75
AS in AST-General Svc Tech	24
AS in AST-Master Svc Tech	4
AS In Automotive Technology	9
AS in Computer Networking	18
AS in Computer Science	76
AS in Early Childhood Ed	89
AS in Emergency Management	1
AS in Executive Secretary	8
AS in Food & Beverage Mgt	5
AS in General Hospitality	3
AS in Hotel Management	11
AS in Marketing	20
AS in Medical Assisting	93
AS In Medical Secretary	6
AS in Office Technology	6
AS in Supervision & Mgt	42
AS in Travel & Tour Mgt	30
AS in Visual Communications	40
AS Law Enforcement Admin	47
CERT in Accounting	3
CERT in AST-General Svc Tech	9
CERT in AST-Master Svc Tech	1
CERT in Automotive Technology	3
CERT in Computer Networking	1
CERT in Computer Science	4
CERT in Cosmetology	13
CERT in Criminal Justice	28
CERT in Early Childhood Ed	4
CERT in Education	4
CERT in Law Enforcement Admin	2
CERT in Marketing	1
CERT in Medical Assisting	30
CERT in Office Technology	3
CERT in Practical Nursing	24
CERT in Pre-Nursing	3

CERT in Sign Lang Interpreting	3
CERT in Supervision & Mgt	6
CERT in Sys Tech - A+ Cert	2
Criminal Justice Certificate	2
Enrichment	4
Journeyworker Certificate	130
Nursing Asslstant Certificate	1
Undeclared	578
Grand Total	1831

GCC Campus Master Plan

- Master Plan Concept:

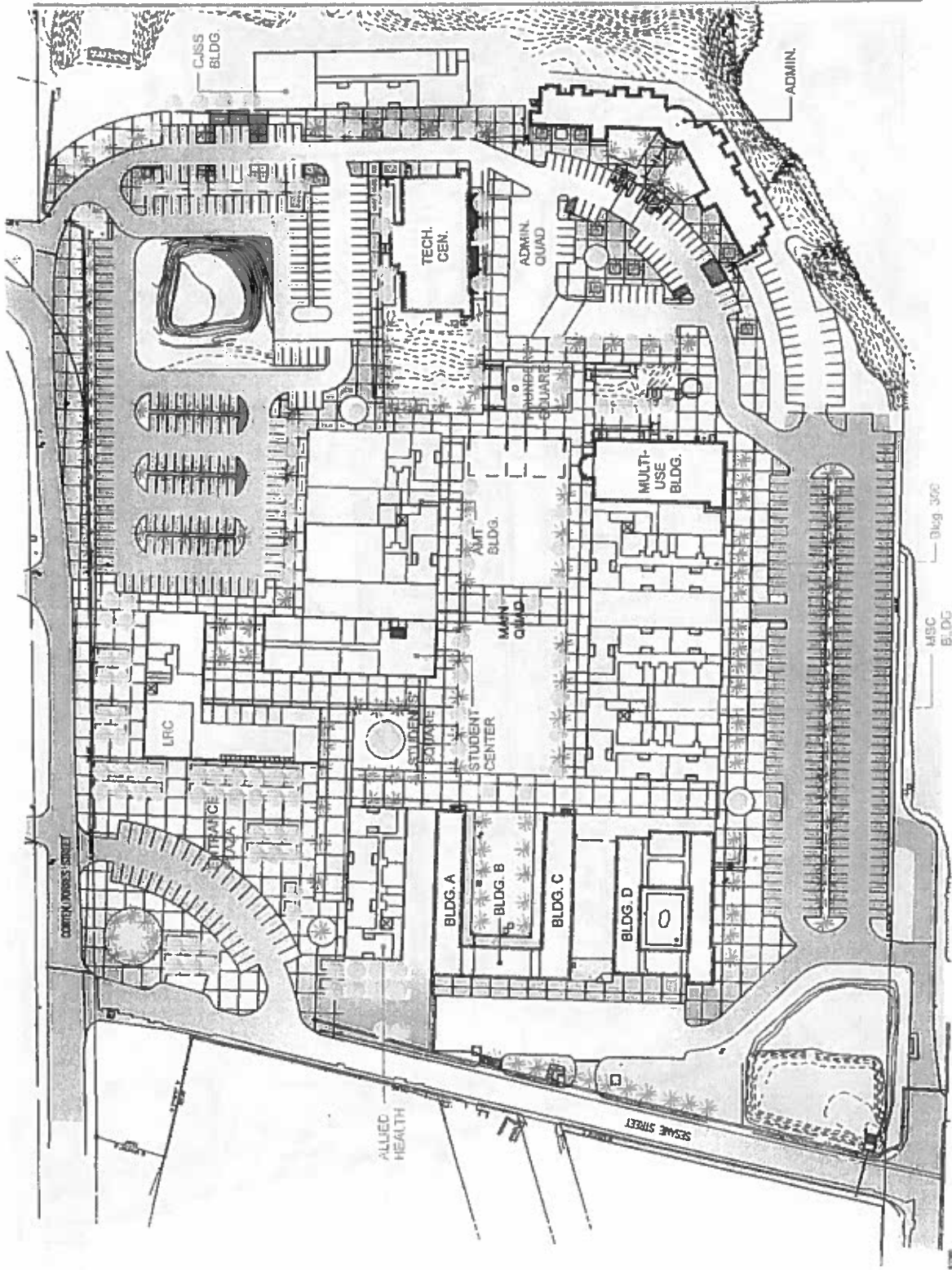
- a.) Enhance open spaces inherent in existing campus layout
- 1.) Main Quad
- 2.) Admin Quad
- b.) Define a Main Entrance to the campus along Cortez Torres Street
- c.) Unify the campus with walkways landscaping, and building characteristics.

- New Buildings:

- a.) Student Center
- b.) Learning Resource Center (LRC)
- c.) Allied Health Bldg.
- d.) Math, Science and Cosmology Bldg. (MSC Bldg.)
- e.) Automotive and Mechanical Technology Building
- f.) Criminal Justice and Social Sciences Bldg. (CJSS Bldg.)
- g.) Bldg. 300

- Main Open Spaces:

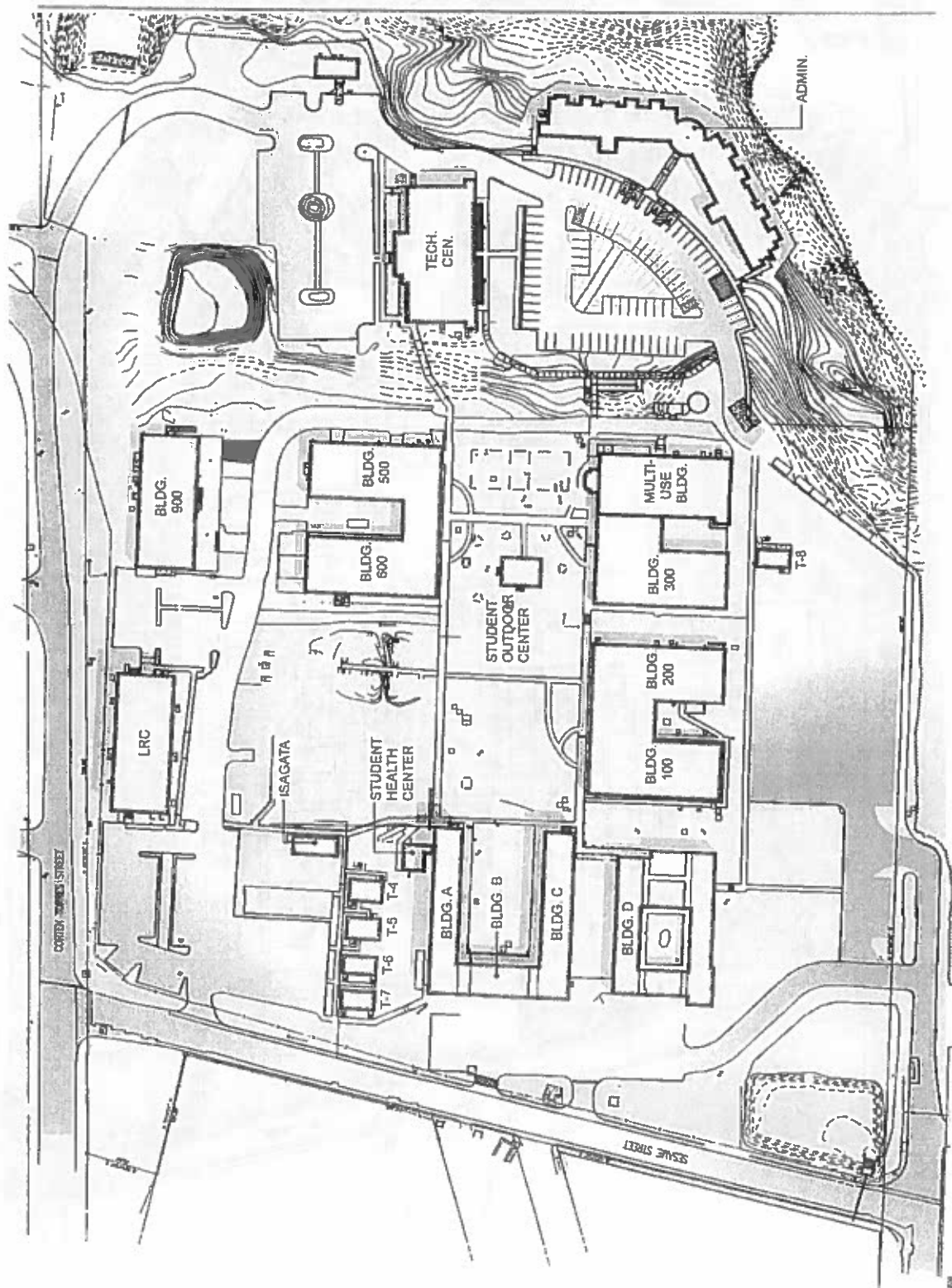
- a.) Entrance Plaza
- b.) Students' Square
- c.) Main Quad
- d.) Founder's Square
- e.) Admin Quad

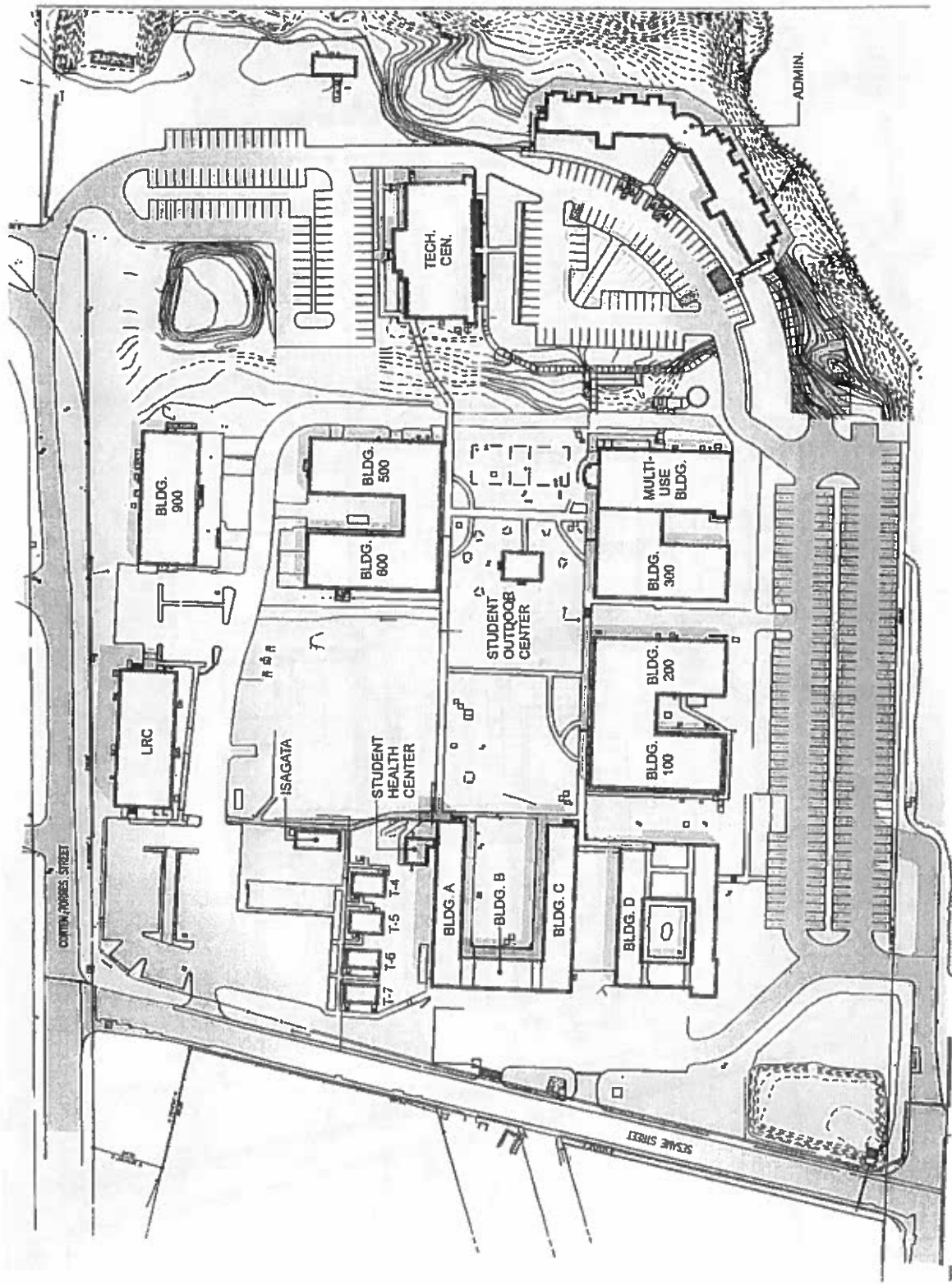


Existing Buildings and Programs

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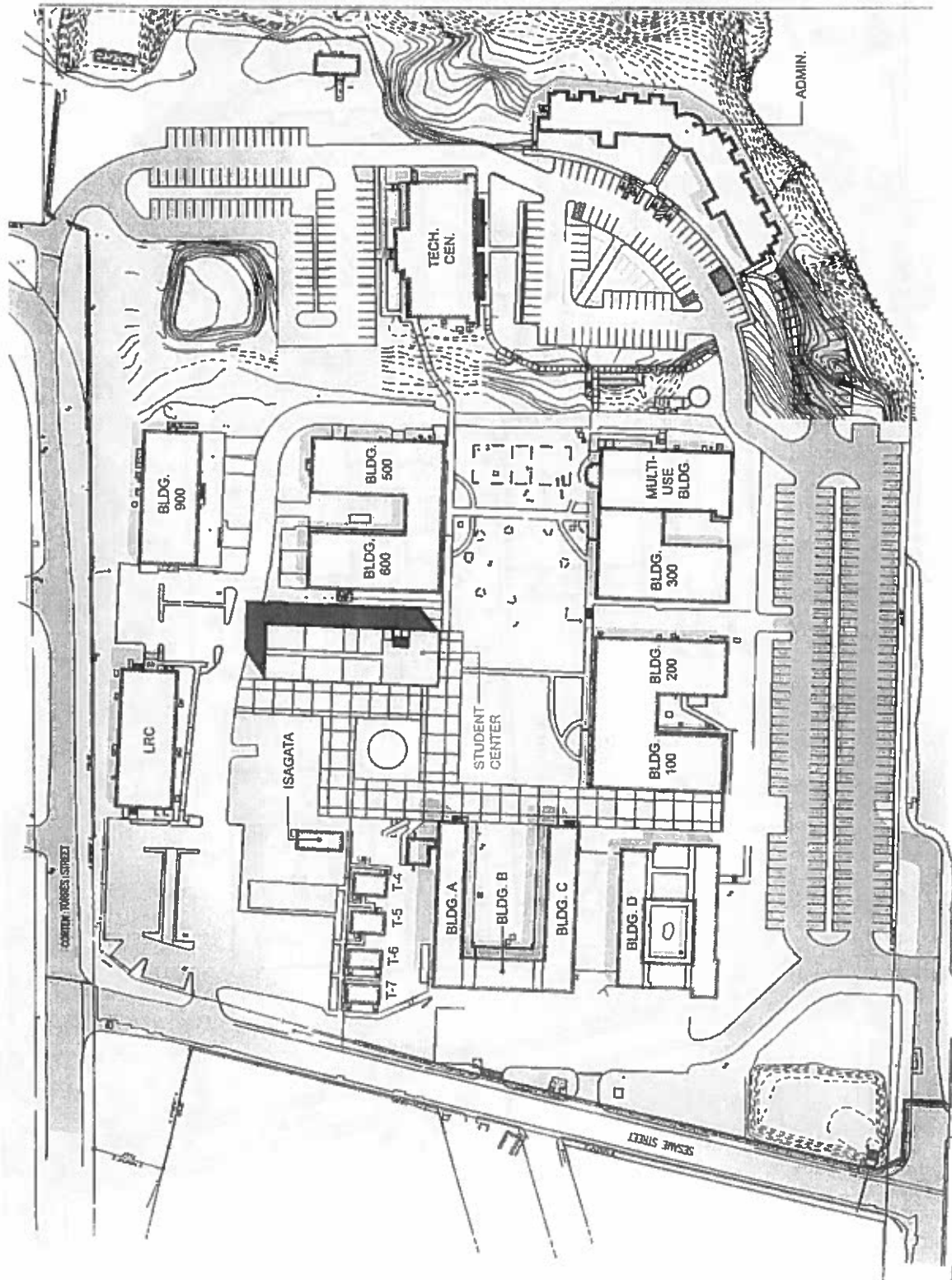
- a) Bldg A--1,400 s.f.
- b) Bldg B--2,820 s.f.
- c) Bldg C--11,276 s.f.
- d) Bldg D--12,760 s.f.
- e) Bldg. 100--11,300 s.f.
- f) Bldg. 200--8,500 s.f.
- g) Bldg. 300--10,300 s.f.
- h) Multi-use Bldg --9050 s.f.
- i) Bldg. 503--8,500 s.f.
- j) Bldg 600--10,200 s.f.
- k) LPC--17,500 s.f.
- l) Bldg 900--14,200 s.f.
- m) Tech. Center--22,300 s.f.
- n) Administration Bldg --27,400 s.f.
- o.) Student Outdoor Center--1,400 s.f.
- p.) Buildings:
 - T-4 T-5 T-6 T-7 T-8 T-9
 - 720 s.f. ea
 - Programs 1
 - 2
 - 3
 - 4
- q) Isagata--10,500 s.f.





Phase 1A

- reconfigure access road from Cortez, Torres Street to the Admin. Bldg
- reconfigure Lot 3: approx 100 spaces
- reconfigure Lot 5: approx 225 spaces.
- demolish T-8 and T-9 and relocate classes to vacant space in Bldg. 300 (approx. 2500 s.f.)



Phase 1B

- Construct new Student Center Bldg, 2-story building 11,000 s.f. per floor; precast conc. walls and metal roof

- Student Center Program:

- a.) Lounge/Lobby ~3400 s.f.
- b.) Bookstore ~1000 s.f.
- c.) Rooms ~1000 s.f. (3 ea.)
- d.) Storage ~800 s.f.
- e.) Restrooms ~600 s.f.

- Construct Plaza and Students' Square approx. 35,000 s.f.