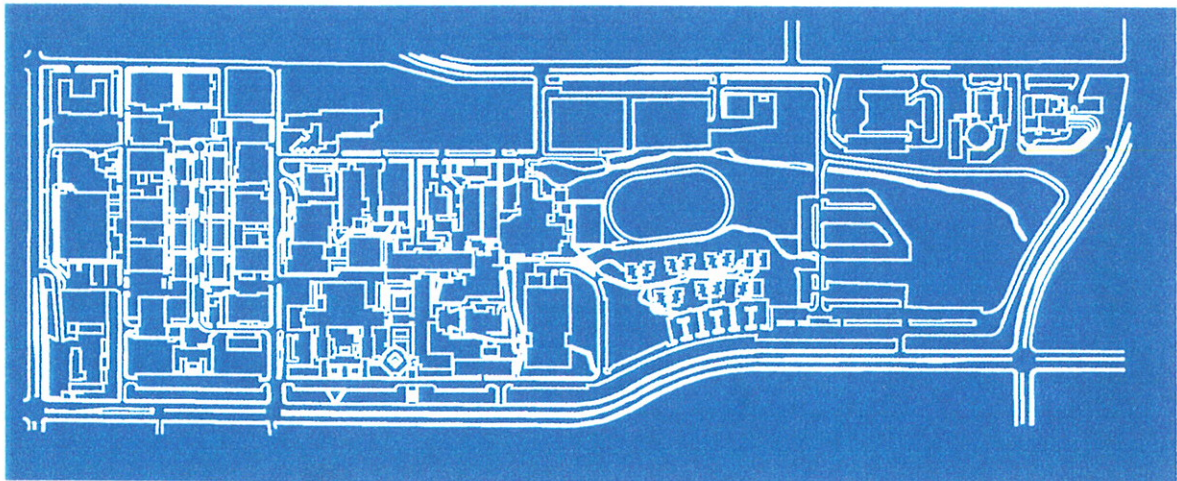


BCIT

British Columbia Institute of Technology

Campus Master Plan

Update ... 1997



Hotson Bakker • Cornerstone

BCIT
Campus Master Plan
Update...1997

November 24 1997

Table of Contents

	page
Section 1.0 Introduction	1
Section 2.0 Overall Educational & Operational Directions	4
Section 3.0 Campus Development Principles	11
1.0 Campus Identity & Perimeter Treatment	12
2.0 Campus Development	13
3.0 Campus Access	15
4.0 Internal Access	18
5.0 Campus Centre	20
6.0 Functional Order	21
7.0 Service Functions	23
8.0 Utilization & Upgrade Strategies	24
Section 4.0 Functional Alignment	26
4.1 Material Management & Physical Plant	26
4.2 Student & User Services	26
4.3 Educational Technology & Curriculum Development	27
4.4 Utilization Enhancement	28
Section 5.0 Implementation Projects and Priorities	29
Appendix A Guidelines for Development Proposals on the Burnaby Campus	33
Appendix B Current Conditions Assessment	34
Appendix C Parking Requirements Analysis	35

Executive Summary

Context In 1989 BCIT undertook a major planning process that lead to the adoption of the Burnaby Campus Master Plan. This report documents an update to the Master Plan to reflect conditions in 1997. There are several factors that generated the need to update the Master Plan, of particular relevance:

- BCIT has ownership and has acquired development control of three sites on the corners of the campus,
- BCIT has realized most of the priority development projects identified in the 1989 Plan, and
- There are new dynamics resulting from emerging economic, technological and educational trends that are reshaping BCIT's strategic directions.

Purpose While BCIT has become a fully multi-campus institution, this project considers the Burnaby campus only. The purpose of the Campus Master Plan is to provide a framework that can assist to identify development priorities and to coordinate individual projects in concert with the overall campus planning directions.

Form The Campus Master Plan update continues to be conceived as a framework plan - an approach that has proved successful over the course of applying the 1989 Plan. The Plan is based on a number of *Planning Assumptions* summarized in Section 2. The major content of the Plan is communicated by means of series of *Campus Development Principles* addressed in the form of development guidelines and graphic information overlays on a campus plan. These are augmented by a series of *Functional Alignment* proposals. The Plan concludes by outlining a general set of *Implementation Projects and Priorities*. The appendices include a graphic overview of the current conditions of buildings and infrastructure.

Key Issues The master planning process has lead to the identification of three major thematic issues that will influence a range of policy and operational directions as well as physical planning and development initiatives over the next planning period. These are:

- campus access,
- facility utilization, and
- partnership development.

Recommended actions are proposed for each. The Master Plan also identifies important functional alignment proposals and reflects BCIT's ongoing program of building and infrastructure upgrade.

1.0 Introduction

Context In 1989 the consultants worked with BCIT to produce a new Campus Master Plan for the Burnaby Campus. Given both the physical conditions of the campus and the status of planning information at that time considerable background analysis was required in order to formulate the framework, scope and recommendations incorporated in the Plan. The form of the Master Plan itself comprised three main components:

- a general assessment of current facility conditions at that time and an estimate of future requirements based on a set of planning assumptions;
- a set of development principles (with selective illustrations of development character associated with the proposed directions);
- a set of priority development projects for the first five year period.

Since 1989 BCIT has been relatively successful in realizing the priority development agenda outlined in the Master Plan (and elaborated by BCIT Physical Plant). Selective accomplishments, from a total of approximately fifty projects, not counting cyclical maintenance, are noted below and illustrated on the campus plan diagram following:

- the removal of most of the portable buildings from campus with the development of new office nodes in the Connector Building and the IBM Technology Building;
- the abandonment of the leased Kaslo Campus through the realignment of components and renovations to the SE-12 and SE-14 Buildings;
- the development of the new SA Campus Centre Building which brings student operations and the Institutes Executive into the heart of the campus (and bridges the legacy divide between the former PVI and BCIT);
- the renovation and upgrade of numerous building areas to accommodate new functions, to realign programs, and to improve utilization;
- the upgrade of facilities vacated by training programs in the Food Pavilion to provide an expanded cafeteria service and conference facilities;
- the development and upgrade of the main campus entrance and the related Campus Square (although the latter is not fully realized);
- the design and incremental development of a rain protected pedestrian system including a major segment of the North-South Spine;
- the design and incremental implementation of a quadrant way-finding system and a campus/building signage system;
- the realization of a number of projects that greatly increase the accessibility and safety of the campus;
- the addition and upgrade of several parking areas;
- major asbestos removal and seismic upgrading projects to a number of key Buildings including SW-1, SW-3, SW-2, NE-2, NE-4, NE-6, NE-18, NE-20;
- the implementation of a cyclical maintenance system and the incremental upgrade of key building and infrastructure elements including roofing, lighting, controls, power substations and emergency power, domestic hot water, and buried utilities.

Current conditions suggest an update to the Campus Master Plan for reasons including the following:

- in the context of rapid change all plans have a useful life, further in this case, having achieved a range of priority campus developments - much of which could be considered catch-up investment - BCIT needs to consider

the types of campus development initiative which will form the priority for the next time period;

- since 1989 BCIT has established ownership and control of three land parcels on the campus edge, these now need to be fully integrated into the Master Plan;
- while evident in 1989, over the intervening time the application of information technology to the delivery of education/training has advanced significantly - the notion of a paradigm shift is commonly cited - this trend will affect the requirements for facility resources and the manner in which they are managed;
- the information age is also generating new and increasing demands for training from perpetual learners, affecting both the range of course type and modes of access involved; in parallel a number of alternate and often competing service providers are appearing in response to these demands with implications, among other things, for a renewed BCIT orientation to responsive customer services;
- the fiscal climate has become one characterized by imperatives for cost containment, for revenue models with significantly less reliance on direct government financial support, and for concerted commitment to client service approaches, and including industry/educational partnerships as part of the entrepreneurial strategy.

Master Plan Framework This Campus Master Plan update has many similarities and some differences from the original 1989 document from which it derives. The Framework is similar to its precursor through the retention of the following aspects:

- the specification of a set of campus *Development Principles* continues to play a major role in defining desired future directions for the campus;
- the Plan recognizes the limits of long planning horizons and considered priority projects for 5 to 10 year maximum period of time.

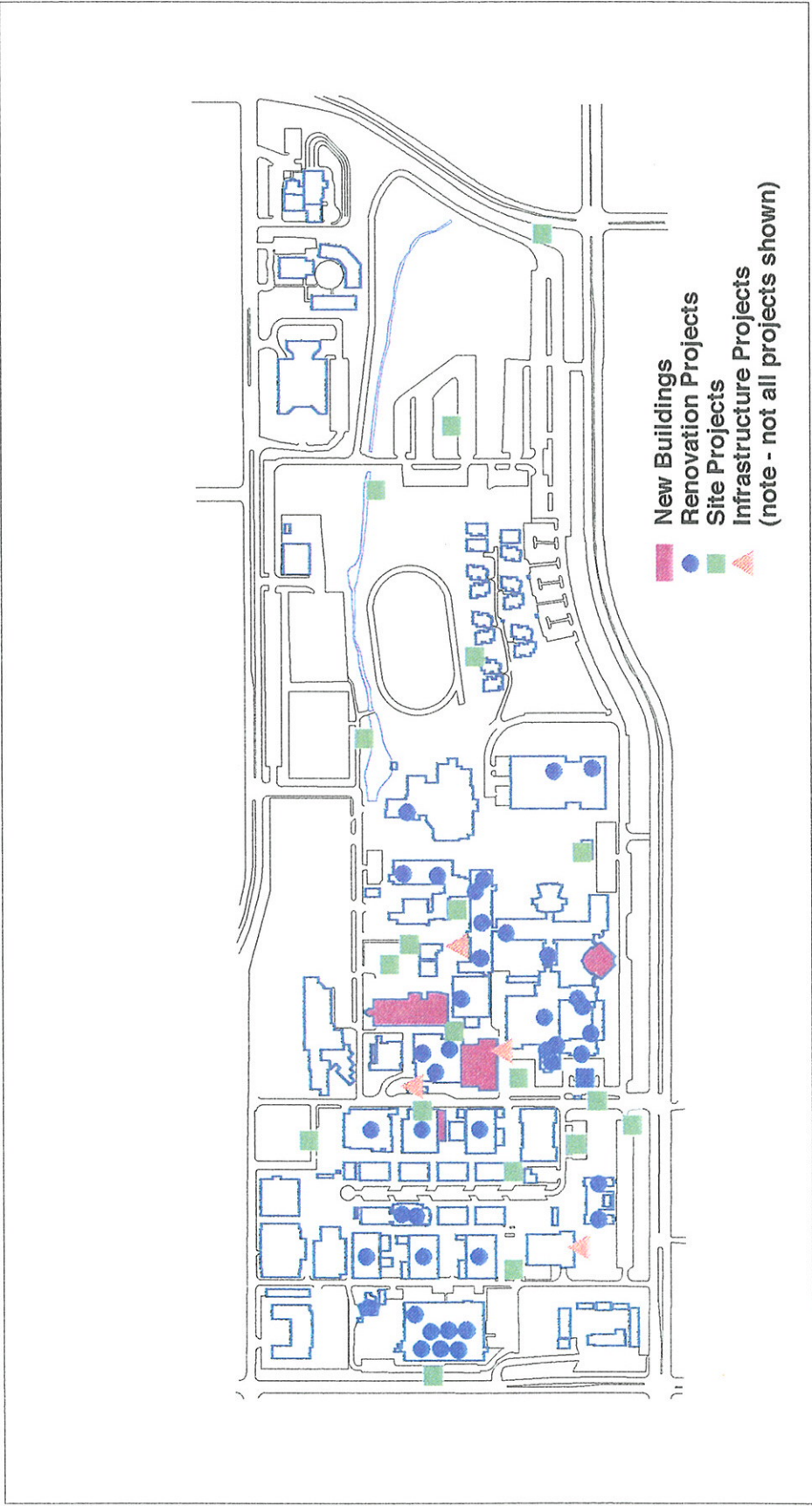
Differences in the framework include the following:

- Augmenting the campus Development Principles is a set of *Functional Alignment* proposals;
- Relatively little effort has been expended on deriving a more refined estimate of facilities requirements recognizing that:
 - over the next time period building significant new facilities for BCIT specific functions will be of relatively less priority than ensuring existing facilities are optimally utilized and incorporate the effects of adopting emerging delivery patterns;
 - the proposed functional alignments address overall issues of modifying existing facilities to achieve the best facility accommodation fit in support of BCIT operational/educational directions; and
 - the Development Principles, particularly those concerned with Development Sites, ensure that provision for BCIT's long term future facility needs is preserved, including the need to consider partnership facility development.
- The assessment of current building and infrastructure conditions is presented in the form of an 'at-a-glance matrix' rather than the product of an extensive engineering audit. Since 1989 BCIT has developed a good information base; major deficiencies have been identified and most of the

major infrastructure problems have been rectified.

Scope This Master Plan update project reflects several scope limits:

- BCIT has become a fully multi-campus institution. The Institute has recently developed a major new Downtown Campus, the Sea Island Campus is undergoing consolidation and upgrade, and BCIT now operates the Pacific Marine Training Centre. In this context, while the Burnaby Campus is still the main campus, BCIT has a significantly greater distribution of operations than in 1989. Nevertheless, the purpose of this Master Plan is to address only the Burnaby campus, recognizing the multi-site character of the overall organization.
- The Master Plan is intended to serve as a guiding framework for campus development decisions, it anticipates additional detailed planning and design around specific development projects
- The Master Plan is expected to have a directly useful life of five to ten years although it broadly considers a longer time frame and many of the principles will be relevant for an indefinite future period.
- Considerable consultation with BCIT representatives has been part of the process for updating the Master Plan. This has include selected interviews, focus group work sessions, open house sessions, and working meetings with the Steering Committee. However, all processes have their limitations and it is hoped that serious omissions have not occurred. Minor oversights or unforeseen developments are expected and it has been the intention to prepare a flexible enough framework that these can be incorporated as the Master Plan is applied.



Developments Since 1989



October 1997

BCIT • Campus Masterplan

Holton Bakker • Cornerstone • Associated Architects

2.0 Overall Educational & Operational Directions

The issues discussed in this section provide a set of background planning assumptions for the Master Plan. The assumptions have been formulated by the consultants based on review of BCIT planning documents and discussion/worksessions with representatives.

Strategic Directions Statement The recent discussion paper (spring 1997) *BCIT's Strategic Direction for the Next Decade* contains several key aspects influencing the shape of the Master Plan update:

- **Core Role:** BCIT's core focus has been set to provide:
 - Job-Ready Graduates
 - Career Advancement Services
 - Industry Performance Improvement Services.

BCIT's modes of service delivery will include on-campus, at-work, and at-home options; these can be presented diagrammatically as below:

Core Roles:	Delivery Modes:		
	Campus Based	Work Place Based	Home Based
Job-Ready Training	●	●	●
Career-Enhancement	●	●	●
Industry Performance Improvement	●	●	●

BCIT is an important economic driver in the provincial economy with a broad mandate for technology transfer. In addition to its education/training programs BCIT responds to this mandate through partnerships which encompass applied research, development, and industry placements.

- **BCIT as a Learning Organization:** Strategic implications for BCIT's success as a learning organization include:
 - focus on learning outcomes within a framework of responding to individual customer needs and including assisting learners identify their best learning 'pathway',
 - recognizing the need for flexible and innovative means of service delivery,
 - investing in the internal development of staff expertise and supportive organizational/technical infrastructure
- **BCIT as an Institution of Enterprise:** Strategic implications for BCIT's entrepreneurial success include:
 - developing expanded range of services responding to market needs and including instructional technology for distance and individual learning,
 - developing an expanded range of relationships with business, industry, and labour for mutually beneficial outcomes,
 - maintaining competitive advantage in areas of specialization through advanced program development, investment in technology, and staff/instructor development,

Planning Assumptions

1. BCIT will continue to expand the range and extent of its program delivery approaches that are based on alternatives or extended options to its traditional on-campus operations; however, the latter also will continue to be strong reflecting many of the program requirements for specialized equipment and lab/shop settings as well as learners' preferences for an intense, concentrated full-time mode of training.
2. BCIT will require additional supporting structures for both student and personnel development associated with its transformation/expansion of delivery approaches.
3. BCIT will be interested in continuing to enhance its customer services orientation to its learners.
4. BCIT will engage in an expanded range of partnerships with other agencies, some of which will have an implication for additional campus facilities
5. BCIT will plan to increase the utilization of its resources and undertake initiatives to exploit the revenue potential of its assets and services as a means to sustain its strategic directions.

Enrollment BCIT's enrollment history since the previous formulation of the Campus Master Plan is summarized briefly in the table below:

	1988-89	1995-96	% Change	Av. Annual % Change
Burnaby Campus:				
Apprentice	4,341	4,419	1.8%	
Carreer-Technical	3,993	4,484	12.3%	
Night School	16,977	20,832	22.7%	
Vocational-Trades	1,627	2,613	60.6%	
Enrollment HeadcountTotals	26,938	32,348	20.1%	2.9%
Total FTE Enrollment	6,268	7,196	14.8%	2.1%
Institute:				
Enrollment HeadcountTotals	31,638	39,839	25.9%	3.7%
Total FTE Enrollment	7,299	8,862	21.4%	3.1%

The enrollment data indicates that over this seven year period the Institute's overall enrollment has increased at an average annual rate somewhat in excess of 3.0%, although this is influenced by the amalgamation of the Pacific Marine Training Institute. Since 1988-89, FTE enrollment on the Burnaby Campus has increased by almost 15% at an average annual rate somewhat in excess of 2.0%. Enrollment headcount enrollment has increased in both cases at a rate higher than FTE enrollment signifying an expanding proportion of part-time students.

BCIT representatives expect the next planning period to resemble the last in terms of global enrollment numbers. Full-time programs are likely to continue to grow at a 'slow-but-steady' rate of approximately 2.0% annually (although the characteristics of these programs may well change). General trends indicate the potential market for part-time learners is expanding

rapidly; this demand is for both flexible access to credit programs and non-credit, portfolio, courses. However, there is also growing competition from other educational/training agencies for this market and BCIT is expected to concentrate on, or expand from, its core strengths rather than target growth per se.

BCIT did not regularly show separate statistics in its main enrollment reports for distance education prior to 1996. At this time it represented approximately 2500 registrants or 250 FTE. While still at a relatively small level, this area is expected to grow at a greater rate than the other enrollment categories (increase over last year was 16%).

**Planning
Assumptions**

1. Enrollment in Burnaby Campus full-time programs is expected to continue to increase at an average annual rate in the range of 2.0%.
2. Enrollment in Burnaby Campus part-time programs is expected to continue to increase at an average annual rate in the range of 3.0%. (Part-time enrollment is a more significant aspect of BCIT's educational services delivered through other sites.)
3. Distance education, delivered via several modes, is expected to grow at a rate greater than the other enrollment categories.

**Program
Delivery Modes**

BCIT is engaged in planning its transition to a more fully integrated multi-mode institution. This direction has many aspects including extensive digitization and modularization of the curriculum, and the development of on-line and distance means of accessing BCIT services. At the same time it is recognized that many BCIT programs will continue to have a campus-based core to their delivery reflecting both the need to utilize specialized facilities and equipment as part of the training program, and also because an intense campus-based program will continue to be the preference of many learners (recognizing that IT may change aspects of the way on-campus as well as on-line programs are delivered).

**Planning
Assumptions**

1. BCIT's plans to increase the relative use of alternate modes of program delivery will be expected to have the following general facilities effects:
 - In at least the short term there will be increased needs for facilities that allow a spatial integration of a core operation developing and fostering innovative delivery approaches; the LRU will be the focus.
 - There will also be increased needs to provide students, individually and in small groups, with places to work on-line both inside and outside scheduled contact time (whether or not students are using their own computers).
 - Given the campus support for larger distributed learning activity the proportion of instructional and academic support personnel relative to on-campus enrollment is likely to increase; this will require some form of accommodation. Part-time instructors working on-line will likely reduce the absolute requirement for office space; additional office facilities are expected to reflect 'hotelling' approaches and to include a greater emphasis on collaboration space.
2. The demand for computer network access capacity will continue to expand substantially.

Special Service Groups In response to its customer service and entrepreneurial strategic directions, supported by BCIT policy, the Institute is expected increasingly to provide services to groups with special needs.

Planning Assumptions

1. BCIT's directions are expected to generate additional campus users associated with the partnership ventures who will utilize/purchase BCIT services such as meeting/conference facilities, library/research services, computer/network services, recreation opportunities.
2. As a continuation of current trends BCIT will attract increasing numbers of students taking on-campus courses part-time (as well as distributed courses); the Master Plan should reflect the somewhat different needs of part-time students.
3. The Master Plan will reflect emerging requirements associated with BCIT's interests in providing enhanced service to special groups including the following:
 - International Education Students
 - Students requiring ESL training
 - First Nation Students
 - Students with Disabilities

BCIT Organization

A number of years ago BCIT embarked on a process of increasing the number of *program groupings* and realigning the programs within these by sector. The current plan is to organize according to eight *program groupings*:

- Construction Trades & Technologies
- Manufacturing & Industrial Mechanical Programs
- Transportation Programs
- Processing & Natural Resources Programs
- Business Programs
- Health Science Programs
- Electrical & Electronic Programs
- Computing & Academic Programs.

In support of the planning for new delivery approaches and a strong customer services orientation, it is also likely that closer alliances will be organized around the operations of 'front door services' and educational technology.

Planning Assumptions

1. The *program grouping* organization will not generate the need to relocate any existing instructional space, however, the Master Plan should identify logical zones for rationalizing possible future development, and address locations should be identified for the administrative base for each *Program grouping*.
2. The Master Plan will incorporate a strategy for enhancing BCIT's 'front door services' including an integrated 'customer services centre'.
3. The Master Plan will incorporate a strategy for accommodating organizational units concerned with emerging ET requirements, particularly oriented around the coordinating role of the LRU.

Resource Utilization As reflected in BCIT's strategic directions, prominence will be given to the issues of targeting operations to both improve the utilization of existing resources and to develop revenue-generating approaches that will reduce the Institutes reliance on the government operating grant. Of particular interest are approaches that will encourage activity in the off-peak periods. These concerns will affect the use of existing facilities for BCIT specific functions and the use of facilities and site resources to develop revenue-producing partnerships.

Planning Assumptions

1. Initiatives to improve the utilization of facilities for BCIT specific functions will be integrated into the Master Plan.
2. BCIT will also consider proposals where existing facilities can be utilized by other agencies in partnership with BCIT for revenue or other mutual benefits.
3. The Master Plan will reflect means by which BCIT's land base can be used to generate revenue and to establish enabling conditions for supportive partnerships.

Facility Requirements

The 1989 Master Plan included an estimate of BCIT's future facility requirements taking into account replacement space for portable buildings, current shortfall and future requirements based on a set of planning assumptions. The future requirements included both instructional and support facilities as well as an allowance for what was termed 'technology transfer facilities', but which is conceptually equivalent to the multi-tenant research and development space currently under consideration. Originally two time frames were considered:

- a 10-15 year period during which it was assumed on-campus enrollment would grow to the order of 8000 FTE, and
- an unspecified longer time frame during which the campus would expand to a nominal build-out capacity of 12,000 on-campus FTE (in both cases the total Institute enrollment would be higher).

Over the past seven years on-campus enrollment has grown by about half the anticipated 10-15 year increase to 7200 FTE.

It was previously estimated that new facility development for the first time period would likely be in the range of 27,000 m² gross (excluding contingencies). This included 3100 m² allowance for R&D equivalent facilities. It was estimated that expansion to 12,000 FTE would require a further development of 31,000 m² including approx. 2000 m² of R&D equivalent facilities.

Since 1989 BCIT has developed approximately 13,500 m² of new facilities and if the currently proposed multi-tenant facility were developed at 5000 m² the total would be 18,500 m² or almost 70% of the original estimate. If Tech Block 2 were to be funded within the time frame the original estimates would be realized almost exactly.

Given the changing context of educational delivery it is even more difficult now to estimate the additional requirements BCIT will have to reach an on-

campus enrollment of 12,000 FTE. With anticipated higher utilization rates it might be assumed requirements would be reduced. On the other hand, off-campus and on-line/distributed learning activity is likely to be a substantially higher proportion of the total activity which will generate some requirements for on-campus space in addition to the 12,000 FTE, which will partly mediate the reduction effects. Nevertheless it appears from current evidence the original estimate of BCIT specific facilities is likely somewhat high, but the estimate of on-campus space developed through partnerships (for either R&D or other mutual benefits) is likely to prove significantly low.

Planning Assumptions

1. Notwithstanding the difficulty of estimating actual future requirements, the Master Plan will preserve site development capacity for the short term time frame for a minimum development of:
 - 10,000 m2 educational space
 - 5,000 - 10,000 m2 applied research space.
2. For the longer time frame associated with an on-campus enrollment of 12,000 FTE, the Master Plan will preserve additional site development capacity for:
 - 25,000 m2 minimum educational space;
 - 15,000 m2 contingency development capacity.
3. The development plan for the campus should plan to optimize the capacity for multi-tenant/partnership developed facilities in accordance with the principles of the Master Plan and the established BCIT *Guidelines for Development Proposals on the Burnaby Campus*. This development will be determined in accordance with market and other conditions; within the foreseeable future in excess of 25,000 m2 is envisioned.

Access Notwithstanding technological developments that allow distributed access, it is to be expected that increasing numbers of students will require physical access to the campus as the Institute and its range of programs and services continue to expand. In a manner consistent with the GVRD's *Livable Region* and transportation plans, it is expected that BCIT will adopt policies and implement measures to encourage higher occupancy vehicle use including use of public transit. This will include measures such as higher fees to better reflect the actual costs associated with individual vehicle access and active support for initiatives that expand available transit options. In this regard, planned development of LRT along the Lougheed Corridor and an increased role for Willingdon as a north-south connector route will provide greater regional campus transit access over time.

However, transit access over the planning period of the Campus Master Plan is not expected to reduce the need to accommodate individual vehicle access in absolute terms. Further, given current parking demand and the anticipated future loss of curb parking along Willingdon, significant increases to the campus parking capacity are considered as a probable requirement if enrollment and other service objectives are to be realized.

***Planning
Assumptions***

1. BCIT will work with regional authorities to support the expansion of transit access to the campus.
2. BCIT will increase parking fees over the planning period.
3. BCIT will adopt measures to increase the occupancy of vehicles accessing the campus.
4. The effects of factors 1 to 3 above will serve to reduce the relative parking demand to 85% of current per capita (FTE enrollment) levels.
5. The Campus Master Plan will incorporate measures to expand the parking capacity including strategies for developing structured parking.

3.0 Campus Development Principles

In this section of the Campus Master Plan a number of *development principles* are presented which address important ant planning issues. Consistent with the approach of the Master Plan as a framework plan, the principles and their associated guidelines outline an overall proposed direction for the form and structure of the BCIT campus, but intentionally leave latitude as to how individual projects will be realized in detail to advance the directions of the Plan. Their purposes are to aid in assessing current conditions, identifying requirements & priorities, and for coordinating aspects of the design development of incremental projects.

The discussion is organized according to eight issues, with relevant subtopics; for each a statement of the planning principles is provided, followed by an explanatory *rationale* where appropriate. More specific proposed directions are stated in the form of *guidelines*. The principles and guidelines are diagrammatically illustrated by means of graphic information overlays on a campus plan base.

1.0 Campus Identity and Perimeter Treatment

Principles:

The edge of the campus should be developed to achieve several objectives:

- to present outwardly a physical character consistent with BCIT's stature as a major provincial institution;
- to establish an edge pattern that encourages recognition and invites participation in BCIT programs and services; and,
- to integrate the campus into its urban context.

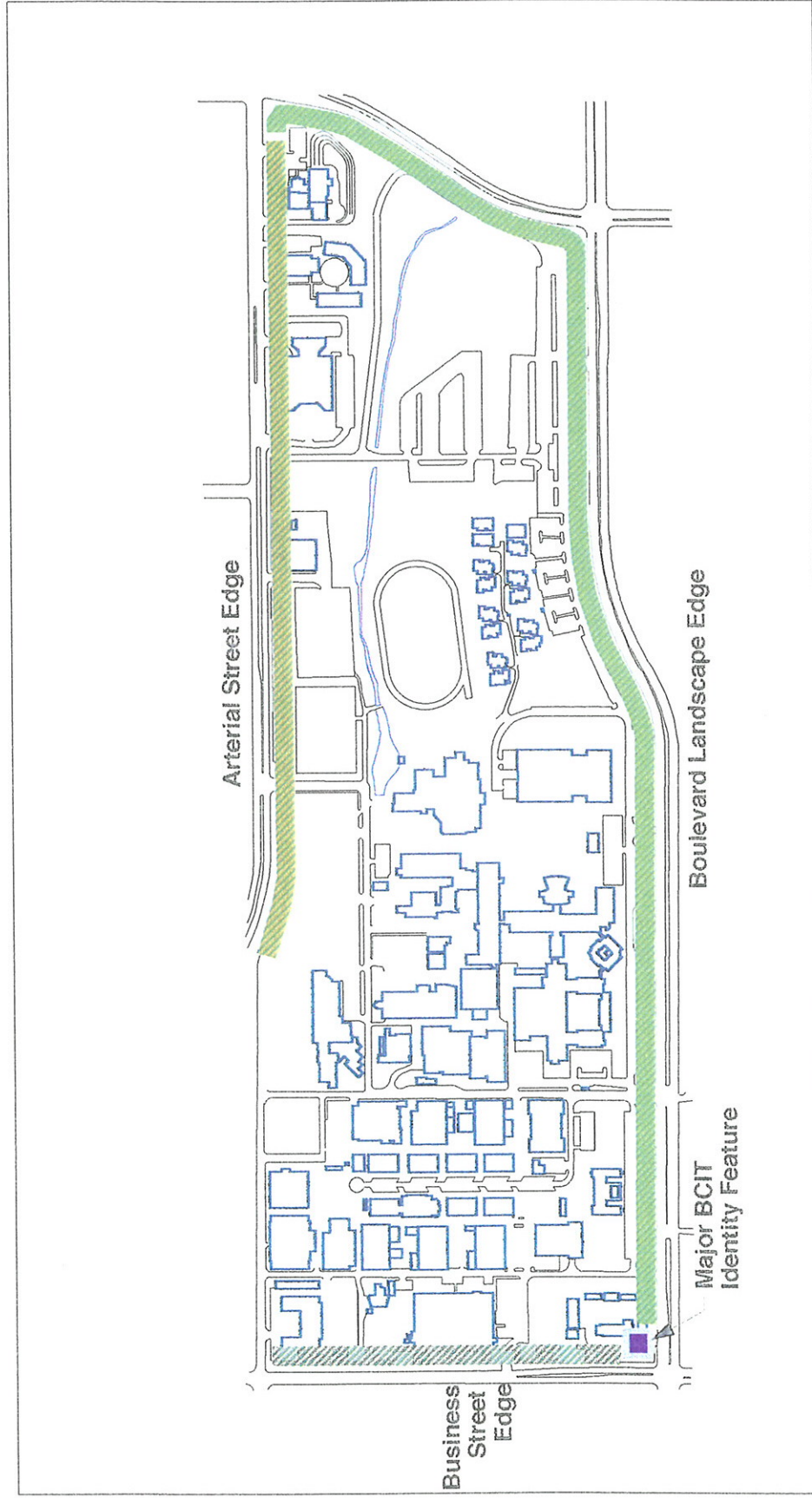
Guidelines:

- The general perimeter edge of the site should be landscaped to convey the image of "green campus setting" for the buildings. The perimeter landscape should be punctured at key locations to provide framed site lines to important internal vistas, spaces, building facades, or other elements.
- The development of the corner site at Willingdon and Canada Way should incorporate a significant element or structure presenting a symbolic corporate identity for the BCIT campus.
- The different street edges should be planned with somewhat different detailed characteristics:
 - the Willingdon Avenue and Deer Lake Parkway (Moscrop) edges should continue to be planned with a major boulevard edge character with generous building setbacks and a formal landscape regime organized along a campus edge road; a transition zone should be designed as Willingdon approaches Canada Way north of Goard Way with reduced building setbacks;
 - the Canada Way edge should be planned to reflect the "business park" character that is emerging on the opposite side - setbacks should be smaller than along Willingdon and the built form more along the lines of a punctuated street wall massing;
 - the Waybourne edge should be planned to reflect the future development of this street as an arterial with a planned future freeway overpass to the north; the current expanse of surface parking should be planned for incremental redevelopment with mixed use parking structures.

Rationale:

The development of the external edge of the campus importantly influences BCIT's image within its physical context, and is implicitly a dimension on which the post-secondary institutional campuses in the Lower Mainland are compared. Major portions of the campus edge are currently not well developed for reasons of historical land use/control and the pragmatic manner in which the site has been developed to date. For the first time current conditions are conducive to addressing this deficiency as BCIT has established control of key sites and as land values and BCIT's strategic directions may generate opportunities for (partnership) development of edge sites.

The character of the campus edge is one area of particular interest to the City of Burnaby. The current P-6 zoning establishes very basic constraints to height and setbacks; specific developments are likely to be subject to review relative to a wider range of urban planning issues.



1.0 Campus Identity & Perimeter Treatment



2.0 Campus Development

Principles:

The campus should be planned to optimize the short and long term use of the campus land base and to maximize the value realized from BCIT's building stock. Development approaches will conform to BCIT policy not to sell any campus land.

2.1 Development Sites

Guidelines:

- Planning procedures should be maintained to ensure available sites are developed for their best use with a developed density consistent with the capacity estimates outlined in table 2.1.
- Development within the core area should be managed with particular attention to the objective of ensuring the on-site campus enrollment target of 12,000 FTE minimum can be accommodated.
- On designated edge sites potential for multi-tenant partnership development should be planned and appropriate policies and procedures established to support the formation of mutually sustaining partnerships; aspects include the following:
 - defining policy for appropriate partners and agreement conditions - see Appendix A: *Guidelines for Development Proposals on the Burnaby Campus*;
 - ensuring BCIT ability to exercise design control over partnership development;
 - ensuring campus access is not negatively affected by partnership development; and promoting BCIT shared use of additional parking through such development.
- Plan perimeter site development to reflect both multi-tenant potential as well as the increasing need to add (structured) parking; this is of particular relevance to the Waybourne Avenue edge (see illustrative figure following).

2.2 Character Areas

Guidelines:

- Planning new development and the upgrade of existing facilities should recognize different character areas on campus and serve to reinforce the internal strength of these, but in a manner that is compatible with the campus whole.
- Planning within the character areas should reflect the prevalent building typologies (and range of materials) and reinforce these with any development or redevelopment.
- Planning within character areas should consider open space as well as building form.
- Commemorative designation for special features and outdoor spaces should be considered to maintain BCIT's connection to its history and alumni.

Rationale:

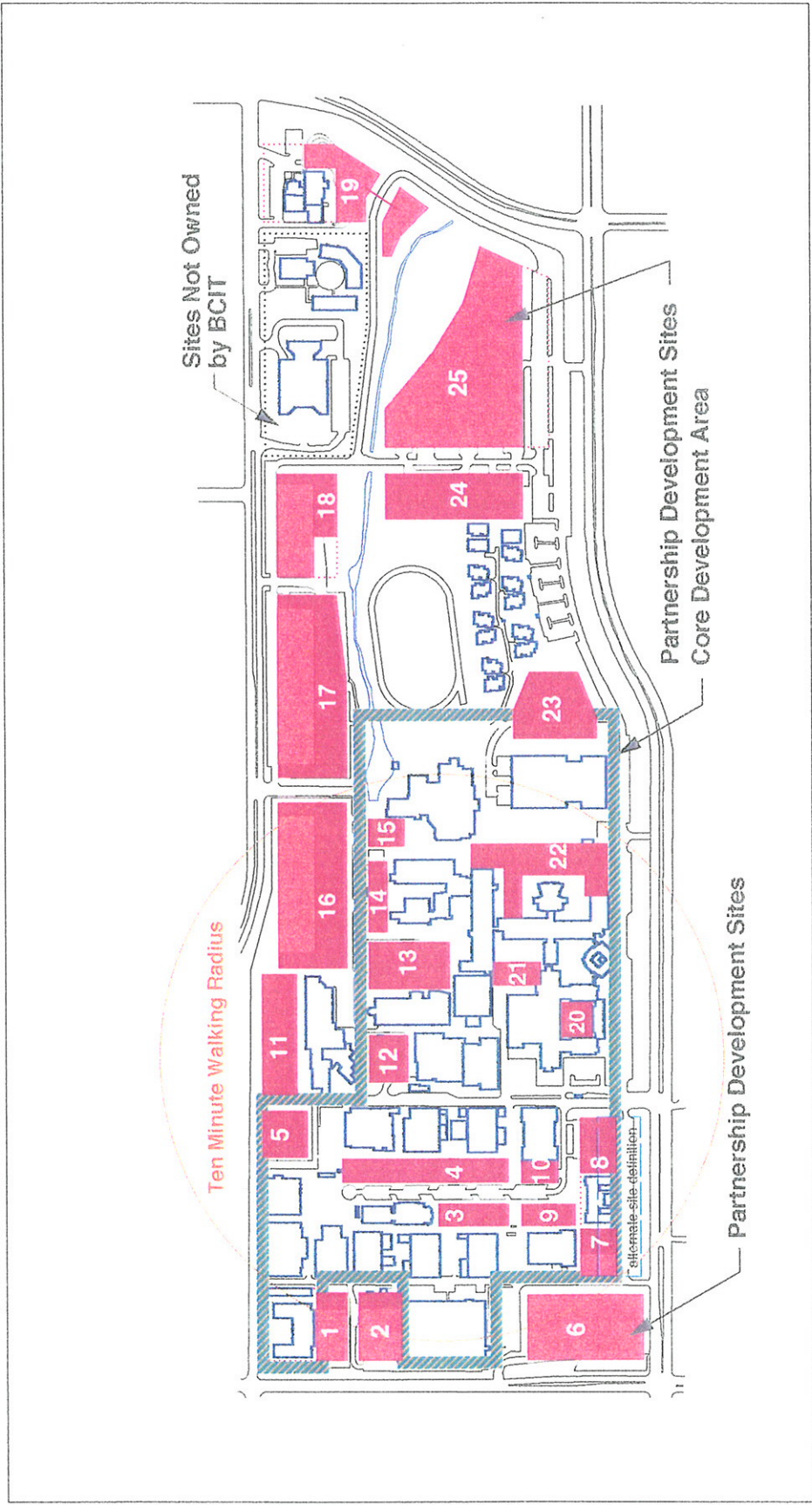
The campus land base is the most critical long-term resource needed to support the viability and growth of the institute. It is important to manage this resource to ensure competing uses are appropriately reconciled to safeguard long term objectives such as those specifically related to capacity targets. There appears to be a strong imperative to use the land asset to augment

BCIT's industry and technology links through the mechanism of multi-tenant partnership development of facilities on the perimeter of the campus. Identifying priority sites and development densities to allow the core campus to accommodate a level of activity associated with 12,000 FTE minimum is a prerequisite to establishing the extent to which residual development capacity can be considered for partnership development involving other agencies.

Managing development on the campus land base is also essential for ensuring maximum value is derived from the building stock. The concept of character areas can be seen as part of a conservation strategy of sorts whereby the buildings in each area are subject to an internally appropriate upgrade regime which extends their use while providing a framework for infill development and promoting a diverse but harmonious campus aesthetic.

The pages following indicate:

- the designated development sites followed by a table calculating their estimated development capacity and listing proposed priority uses where relevant;
- illustrative building sections through the east edge of the campus along Waybourne Avenue showing two possible general forms of multi-use development incorporating structured parking;
- a campus plan designating the overall character areas.

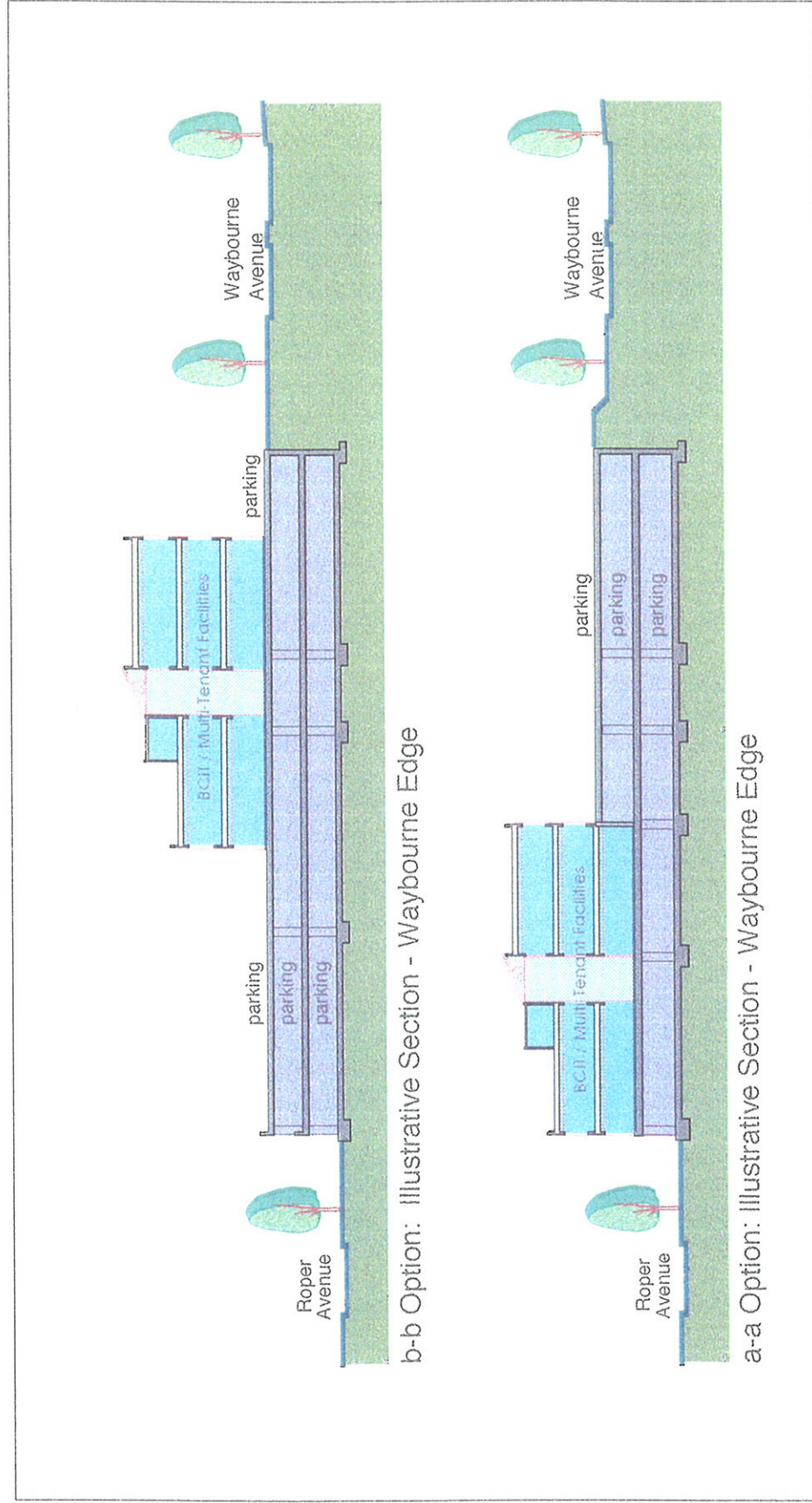


2.1 Campus Development - Sites



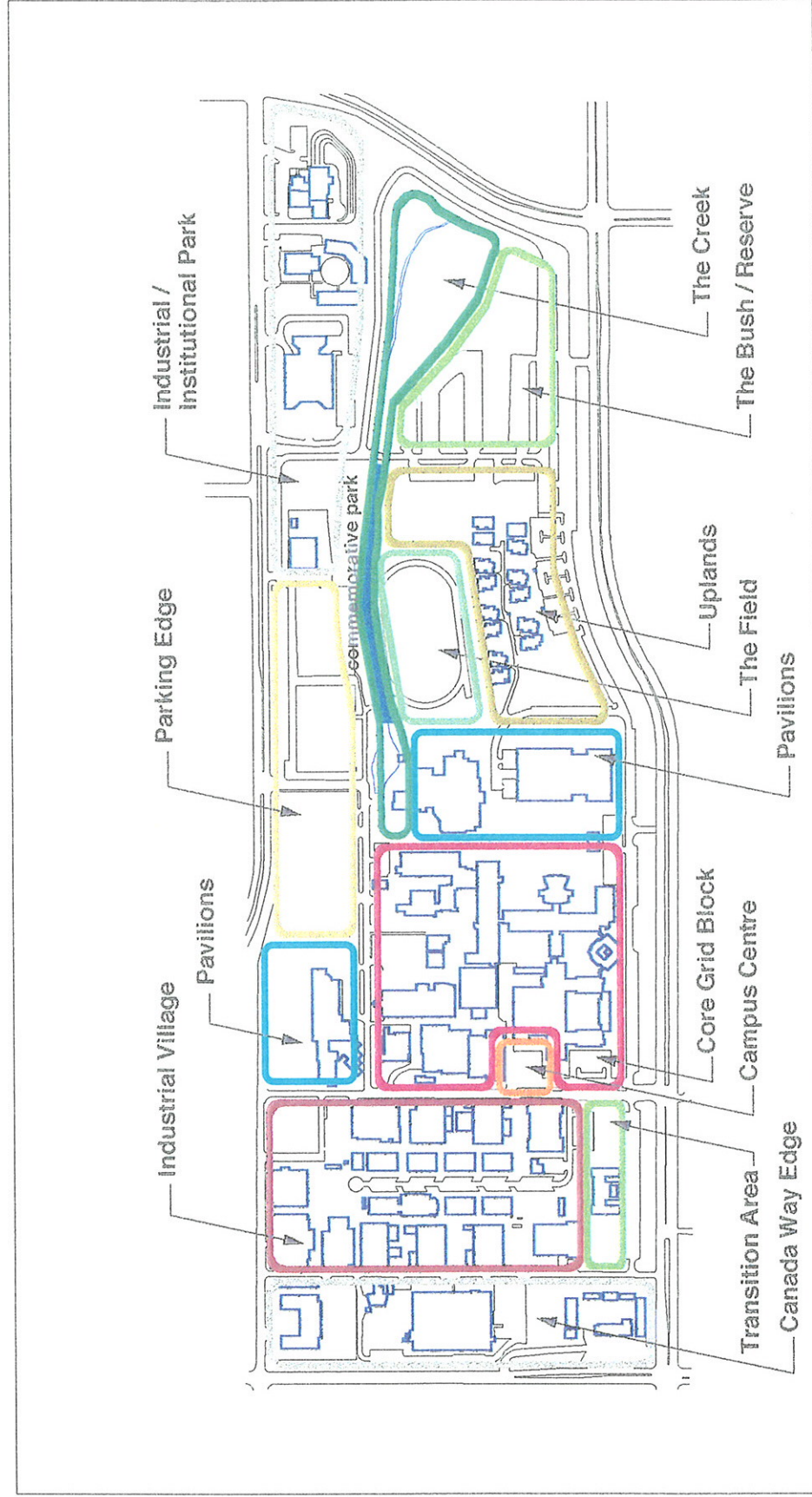
Site	Approx. Net m2	Anticipated Use	Estimated Coverage	Estimated Building Height excl. parking	Estimated Development Capacity	Existing Facilities Displaced	Notes
NE							
1	Undeveloped area NE corner	2,400	BCIT Physical Plant & Material Management/ Multi-Tenant	0.65	3	4,680	
	- Site including BCBC Bldg	6,000		0.65	3	11,700	2,689 - In long term BCBC Bldg could be replaced
2	Undeveloped area E of NE-1	3,000	BCIT / Multi-Tenant Development	0.70	3	6,300	- Dev. potential depends on replacing NE-3
3	Area of existing NE-21 & NE-23	1,600	BCIT - Construction Centre	0.80	3	3,840	1,180 Core Area
4	Area of existing NE-22 NE-24 NE-26 NE-28	4,000	BCIT - Transportation Centre	0.80	3	9,600	2,676 Core Area
5	Parking area S of NE-12	2,200	Unspecified	0.75	2	3,300	
NW							
6	NW corner	8,000	Multi-Tenant Development & Structured Parking	0.65	4.5	23,400	Major regional development Site - Potential for Structured Parking
7	Lawn area N of NW-1	1,800	BCIT / Multi-Tenant Development	0.65	3.5	4,100	Core Area
	- Site including NW-1 area	3,800	BCIT / Multi-Tenant Development	0.65	3	7,410	1,242 - Dev. potential increased with long term replacement of NW-1
8	Lawn area S of NW-1	2,100	Unspecified	0.60	3	3,780	Core Area -could include BCIT Services and Multi-Tenant Uses
9	Work/storage yard S of NW-8	1,100	BCIT - Construction Centre	0.65	3	2,150	Core Area
10	Current R-2000 Demo House Site	820	Unspecified	0.75	3	1,850	Core Area
SE							
11	Parking area E of SE-1	4,200	BCIT - Electrical Programs / Multi-Tenant	0.65	2.5	6,830	Structured parking also potential use
12	Area of existing SE-4	1,600	BCIT- Unspecified	0.75	2	2,400	705
13	Area S of SE-6	4,000	BCIT - Tech Block 2	0.65	4	10,460	Core Area
14	Area E of SE-10 SE14	1,400	BCIT- Unspecified	0.75	2.5	2,630	Core Area

Site	Approx. Net m2	Anticipated Uses	Estimated Coverage	Estimated Building Height excl. parking	Estimated Development Capacity	Existing Facilities Displaced	Notes
SE							
15	Open area adjacent to SE-16	1,000 BCIT- Unspecified	0.85	2.5	2,130		Core Area - could expand Recreation and Wellness Centre uses
16	Existing surface parking	15,000 BCIT/Multi-Tenant Development & Structured Parking	0.40	2.5	15,000		- Potential for Structured Parking
17	Existing surface parking	12,000 Multi-Tenant Development & Structured Parking	0.40	2.5	12,000		- Potential for Structured Parking
18	Area S and around Warehouse	3,800 BCIT - PP. & Mat. Man. &/or Multi-Tenant Development & Structured Parking	0.40	2.5	3,800		- Dev. potential depends on retention of SE-9
	- Site including SE-9 area	6,300	0.50	2.5	7,880	1,115	
19	Area W and around AirCare	4,500 BCIT / Multi-Tenant Development	0.40	2.5	4,500		
	- Site including AirCare Bldg	9,500	0.40	2.5	9,500	2,310	existing area approx.
SW							
20	SW-1 Courtyard Infill	1,090 BCIT - Integrated Service Centre	1.00	1.75	1,910		
21	Bridging site between SW-1& SE-12	1,000 BCIT - Office Node	0.90	2.5	2,250		
22	Open area S of SW-3	5,500 BCIT - Eng. Programs	0.75	3.5	14,440	200	Core Area
23	Open area S of SW-9	5,000 BCIT - Residence / Conference Support & Day Care	0.60	2.5	7,500		- Potential for Structured Parking under alternate scenarios
24	Area S of Residences	6,500 BCIT - Potential Residence Expansion	0.45	3	8,780		
25	Parking and undeveloped land SW corner	18,300 BCIT / Multi-Tenant Development	0.40	3	21,960		
	- Larger assumed Site Area	23,000	0.40	3	27,600		
Estimated Development Capacity		Base Case			179,590	4,761	Net Increase 174,829
		Expanded Sites			204,640	12,117	192,523
		Core Area			55,040	4,056	50,984



2.1 Campus Development - Illustrative Sections





2.2 Campus Development - Character Areas



3.0 Campus Access

Principles:

The campus should be developed to facilitate physical access to BCIT. This entails both planning for growth via individual vehicle access as well as encouraging the development and use of alternate modes of access including public transit.

3.1

Entrances Guidelines:

- Major vehicle entrances should be developed from the bordering city roads in each of the campus quadrants in addition to the main address entrance from Willingdon ; this implies:
 - NW - develop a new entrance from Canada Way between Bldg. NE-1 and the corner site;
 - NE - enhance the existing signalized entrance at Carey Ave. from Canada Way;
 - SE - enhance the existing entrance from Waybourne Avenue onto Roper Ave.
 - SW - relocate and enhance the entrance from Willingdon to align with Kyle Street.
- In association with other transit and parking developments plan to relocate the traffic signal on Willingdon to serve the main BCIT entrance.
- Provide identification and orienting devices at each entrance (gatepost signage, simplified campus plan, etc.).
- Coordinate the development of parking with the entrances to allow ease of vehicle movement and to assist in directing visitors how best to access the campus.

3.2

Roadways Guidelines:

- Develop a clear perimeter circulation pattern with edge roads on the east, west and south sides of the campus connected directly to the campus entrances.
- Define the edge roads with a consistent treatment. Specific recommendations include the uses of plane trees each side of these roads, the use of a distinctive lamp standard, and the use of large scale signage elements defining significant address points.
- Plan to extend the front road parallel to Canada Way to serve multi-tenant development along this edge of the campus.
- Maintain the option to realign the West edge road north of Goard Way if it is decided in the future this better supports the redevelopment of sites 7 and 8. (see development sites section)
- Develop parking along the roadways in a consistent manner.

3.3

Parking Guidelines:

- Develop main perimeter parking areas on the east and south sides of the edge roads.
- Plan for the development of structured parking over the parking areas on the east side; consider this in conjunction with the potential for multi-tenant development. (also see development sites section)
- Develop the main parking lots with a consistent and orderly treatment of paving, stall delineation, signage, and lighting.

- Increase the amount of short term parking associated with the 'front door' services at the main Willingdon entrance.
- Develop small visitor parking areas adjacent to main address locations.
- Manage the total parking supply to support access to the campus in response to enrollment growth and BCIT's objectives to offer special industry programs which require good parking to be successful in attracting participants.

3.4 Transit Guidelines:

- Promote increased transit access to the campus with the relevant authorities.
- Plan for the option of developing a transit loop on campus to encourage greater student use.
- Plan for the longer term option of developing transit routes through the campus.

3.5 Urban Trail Guidelines:

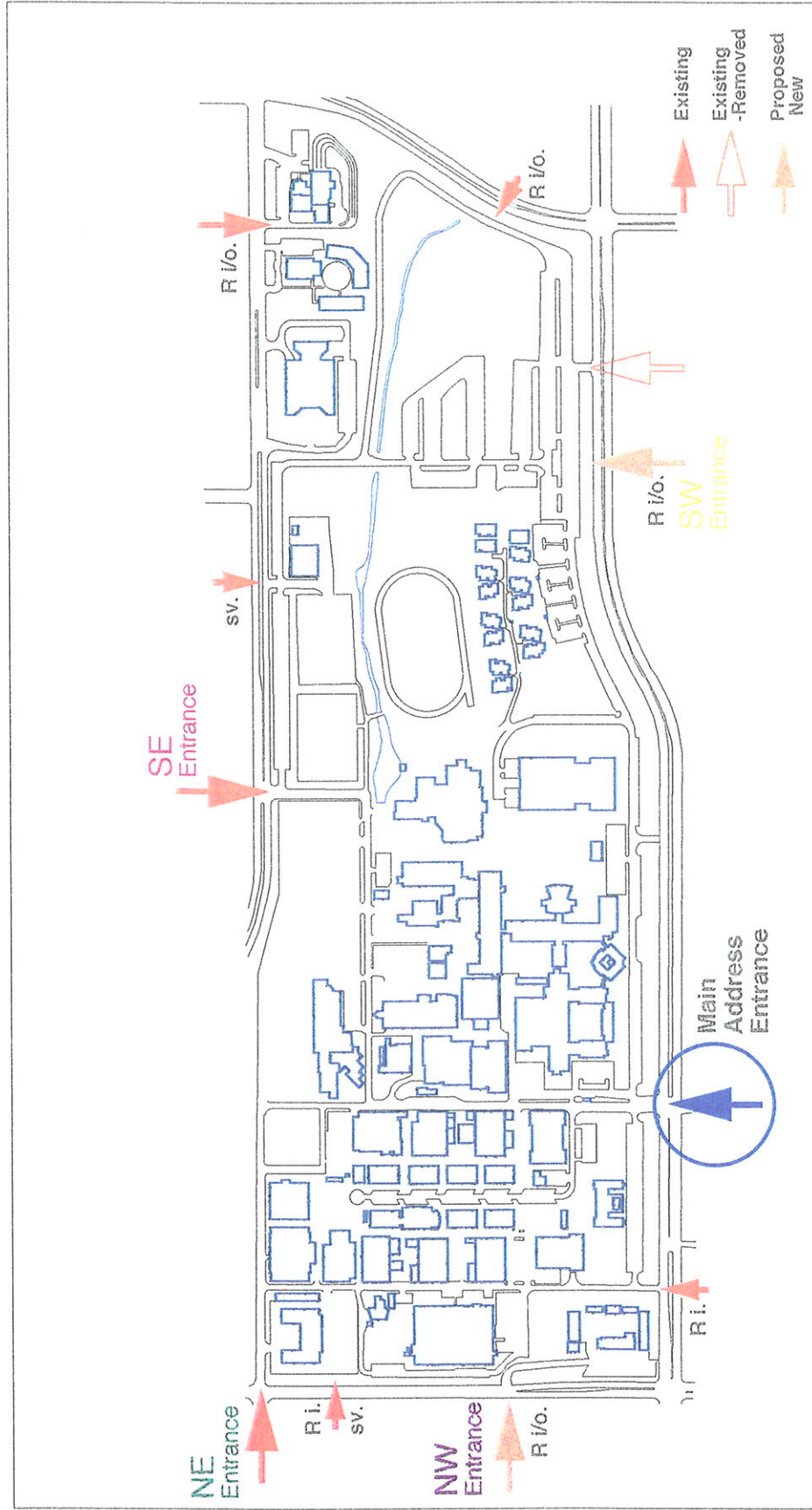
- Plan to accommodate proposals by the City of Burnaby for the development of an urban trail system which would enter the campus on the southwest edge.

Rationale:

The concept of campus ring roads proposed in the 1989 Master Plan has been considered by BCIT to create conflicts and issues of liability with regard to pedestrian movement within the core of the campus. This has lead particularly to measures to eliminate most traffic on Goard Way and to reduce traffic along Smith Street. With better developed campus entrances and defined destination parking areas it should be possible to use the external streets to a greater extent to deliver vehicle traffic close to a parking location. Nevertheless, it is necessary to develop a campus roadway network to convey vehicles to destination parking and to provide the necessary finer scale of addresses to BCIT components.

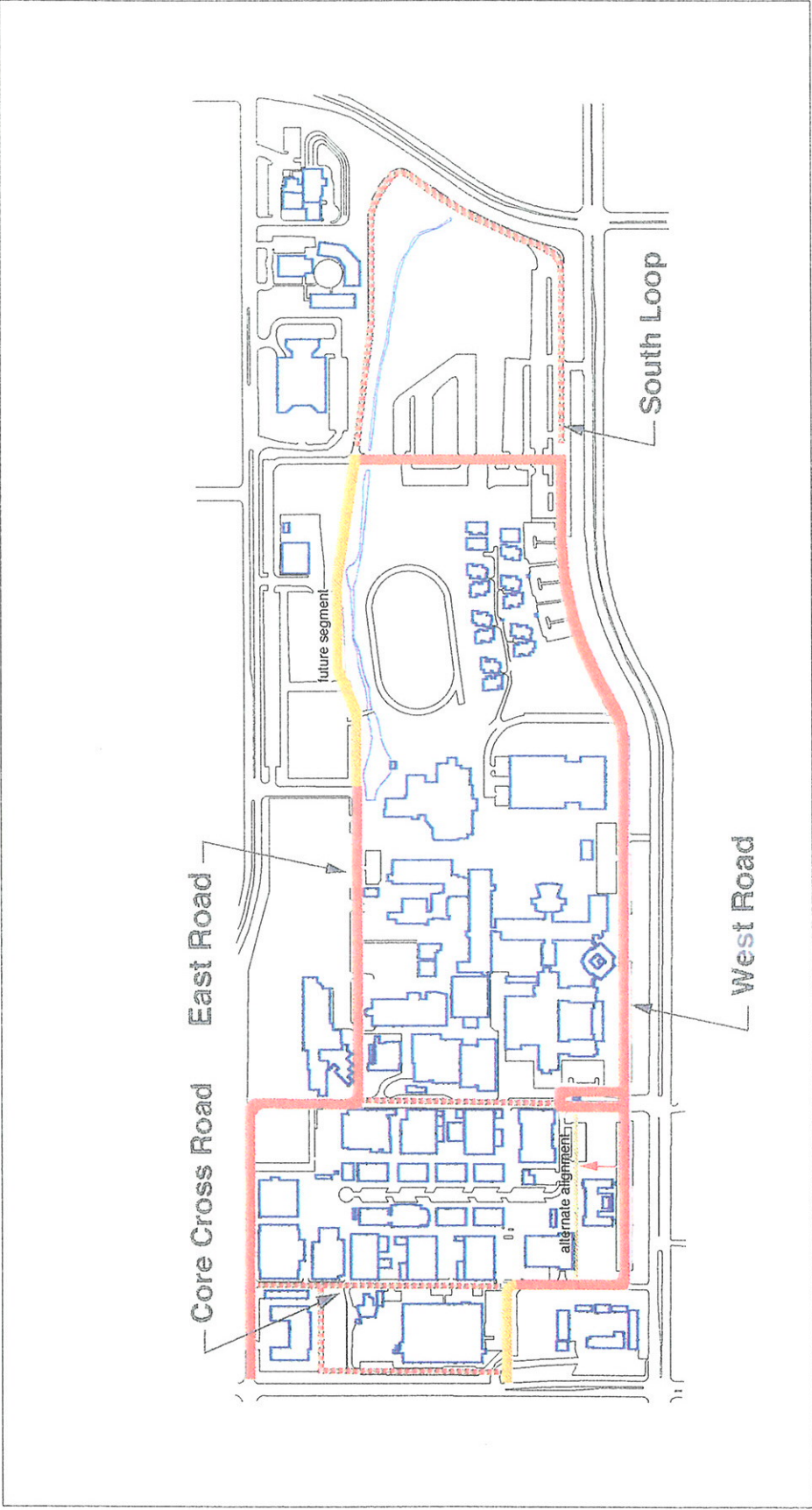
It will be necessary for BCIT to promote both increased transit access and an increased supply of parking to support a campus enrollment of 12,000. It is increasingly evident that parking is becoming a constraint - available land for additional surface parking is virtually exhausted, many BCIT program representatives are noting parking as a constraint to delivery success, at a near future time parking on Willingdon (approx. 250 spaces) will be reduced or eliminated (a summary of parking supply and estimated future requirements is appended). Part of the overall strategy for access and parking will necessarily involve an increase to parking fees. This will both encourage users, via a pricing mechanism, to consider their options more economically, and provide the revenue stream that can finance increasing the supply by means of structured parking development. Surrounding land values are increasing to the level that in the reasonably near future the commercial value of sites over structured parking will be viable and BCIT may consider partnership development along the Waybourne edge to be a feasible means of generating compensating revenue - the planned upgrade of the arterial status of Waybourne with a freeway overpass proposed will accelerate these possibilities.

As well as increasing supply, parking structures can also better define the campus order and make it more accessible for outside visitors. The location of a structure on site 16 (lot 7) is close to the core and could support a wider range of special programming in the campus centre.



3.1 Campus Access - Entrances

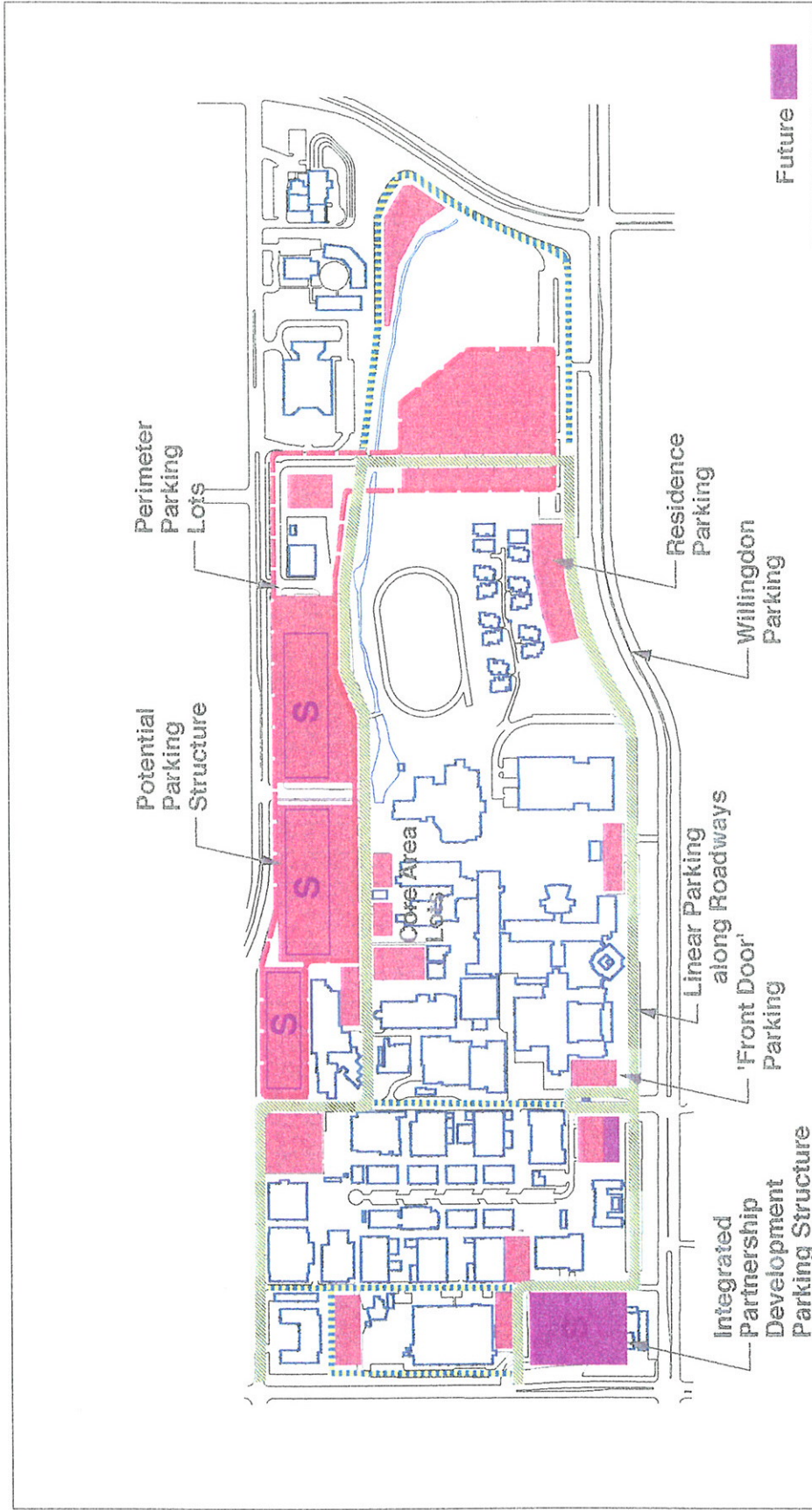




3.2 Campus Access - Roadways

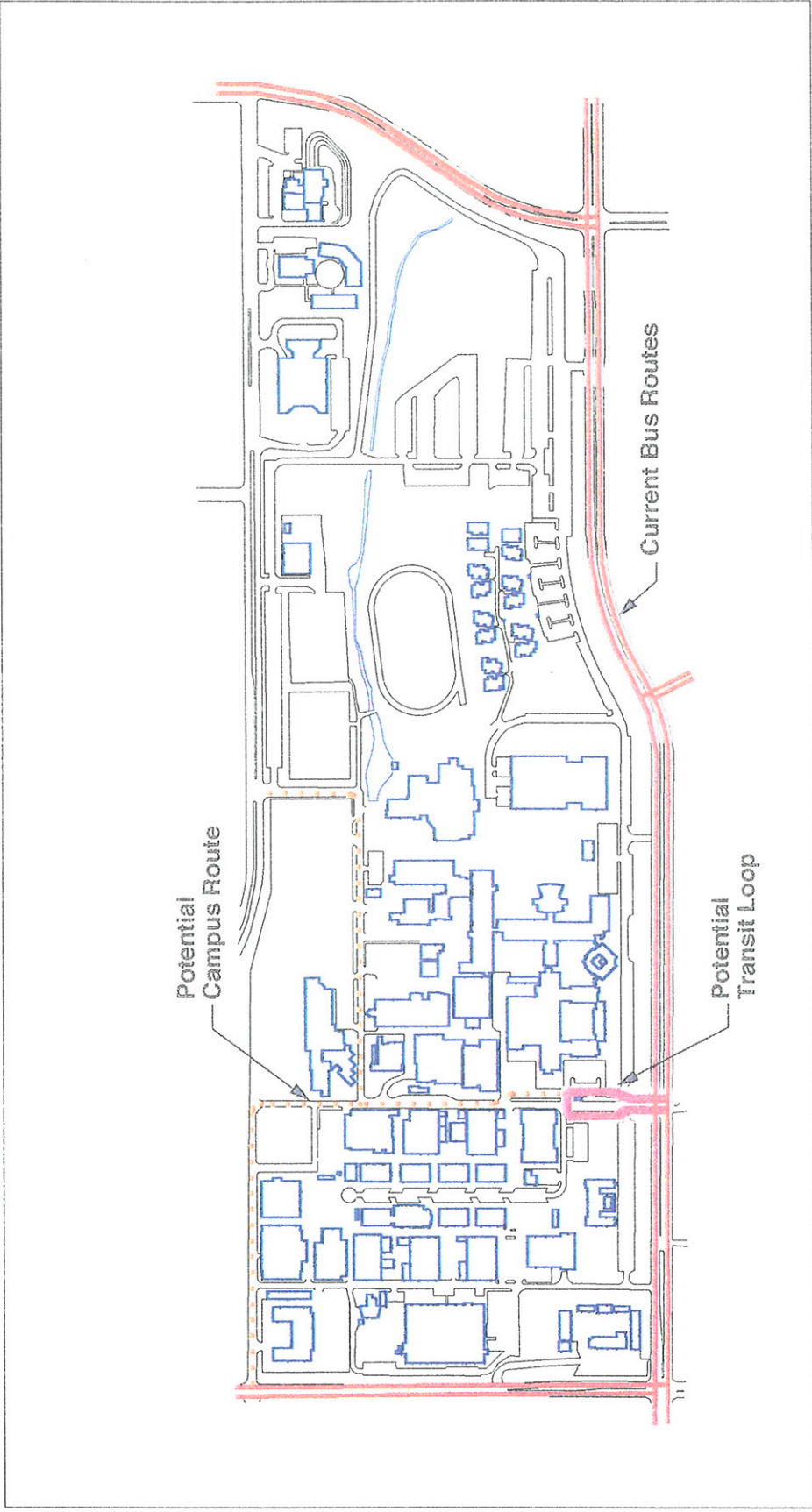


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3.3 Campus Access - Parking

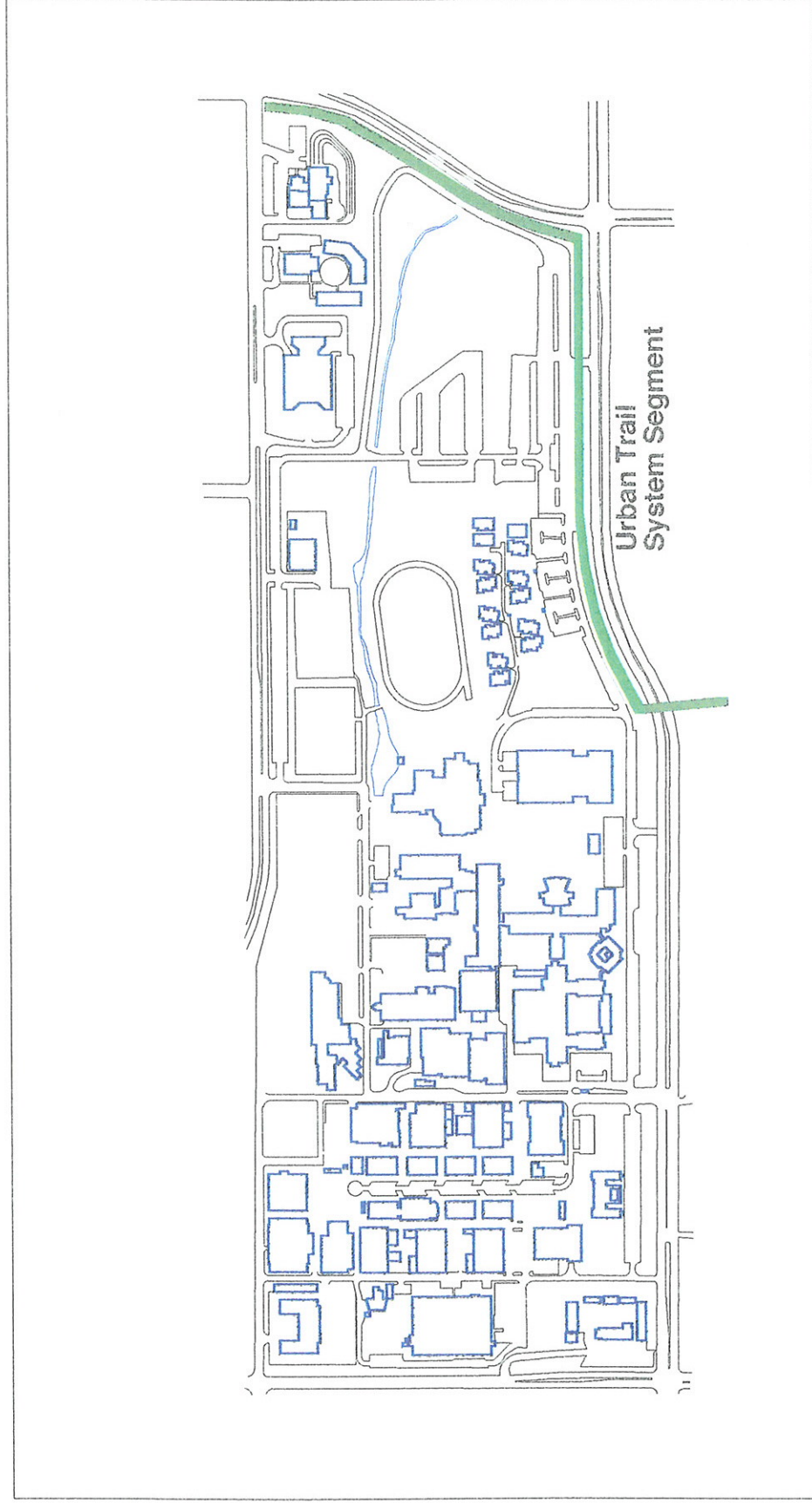




3.4 Campus Access - Transit



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3.5 Campus Access - Urban Trail



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4.0 Internal Access

Principles:

The campus should be developed to facilitate internal pedestrian movement within the campus encompassing features that provide both means for direct access and for an orienting structure.

4.1

Pedestrianways Guidelines:

- Individual project planning should reflect and strengthen the system of main pedestrian routes.
- Pedestrian routes should connect the core campus area to all perimeter parking lots and to the campus edge at logical points of pedestrian entry.
- Pedestrian routes in the core area should connect all building entrances to facilitate access to and movement between buildings, particularly enhancing movement within the limits defined by the ten minute walking distance commonly used as an informal criterion for a pedestrian precinct and corresponding to the time often available to move between scheduled classes.
- Plan exterior and interior routes as a single system, also ensuring there are continuous exterior routes through the campus that do not require entering buildings, as well as interior routes that interconnect buildings where feasible (as with the existing buildings this can be achieved through multi-level circulation). Provide visual connection between interior and exterior routes where ever possible to aid orientation.
- Continue to develop the north-south spine which can increasingly be used to organize the location of major common instructional resources and internal services.
- Maintain the development of pedestrian routes using a common system of paving, canopies, lighting and signage.
- Development should incorporate well scaled, sun oriented open spaces along the pedestrian routes that can encourage informal student use; incorporate amenity landscape features and generous opportunities for seating.

4.2

Addresses Guidelines:

- Recognizable address points should be developed for all major BCIT organizational components.
- Components that have an interface function with incoming students and outside visitors should be developed on the edge roads; there should be a specific building entrance leading to the component associated with the address; the address should be identified by a pylon sign; short term parking should be developed in close proximity to the address.
- Major internal components should be identified with an address along the main pedestrian routes; in the case of large interconnected buildings accommodating a number of components, bold directory signage should be installed at entries and continued internally at key corridor nodes.

4.3

Wayfinding Guidelines:

- The campus quadrant system should continue to be applied to provide an overall framework for enhancing the spatial legibility of the campus.
- The quadrant system should be used to provide both a colour and an

alpha-numeric identification system for campus locations from the scale of zones, to buildings, to individual rooms.

- Campus wayfinding should be enhanced by a coordinated signage system incorporating a hierarchy of sign types.
- Campus maps should be installed at all key arrival points.
- Electronic information kiosks should incorporate wayfinding applications.

4.4

Safety, Security and Accessibility

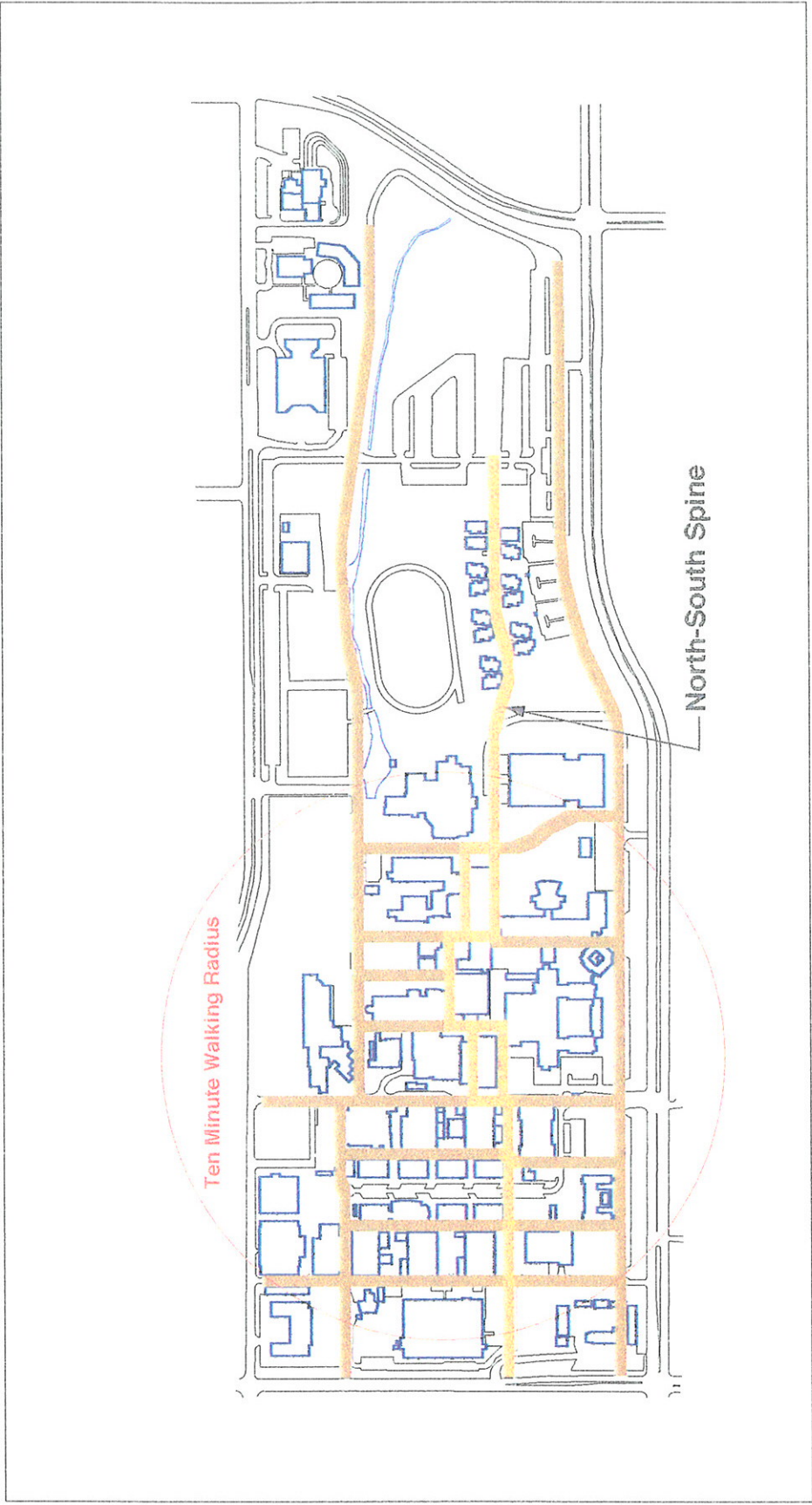
Guidelines:

- Security while often seen as an issue of protecting persons and property, from a campus planning perspective should be considered a means by which access can be increased.
- Security and safety should be planned as an aspect of all campus development.
- BCIT should standardize building security systems and procedures to make these more easily implemented and maintained by users, and to give users a greater sense of safety-related confidence.
- BCIT has set the objective to develop a campus with exemplary provision for accessibility by all users; in response all projects should automatically incorporate good practice design measures and redress existing barriers where possible, see *Facilities Access Plan 1996/97 to 2000/01*.

Rationale:

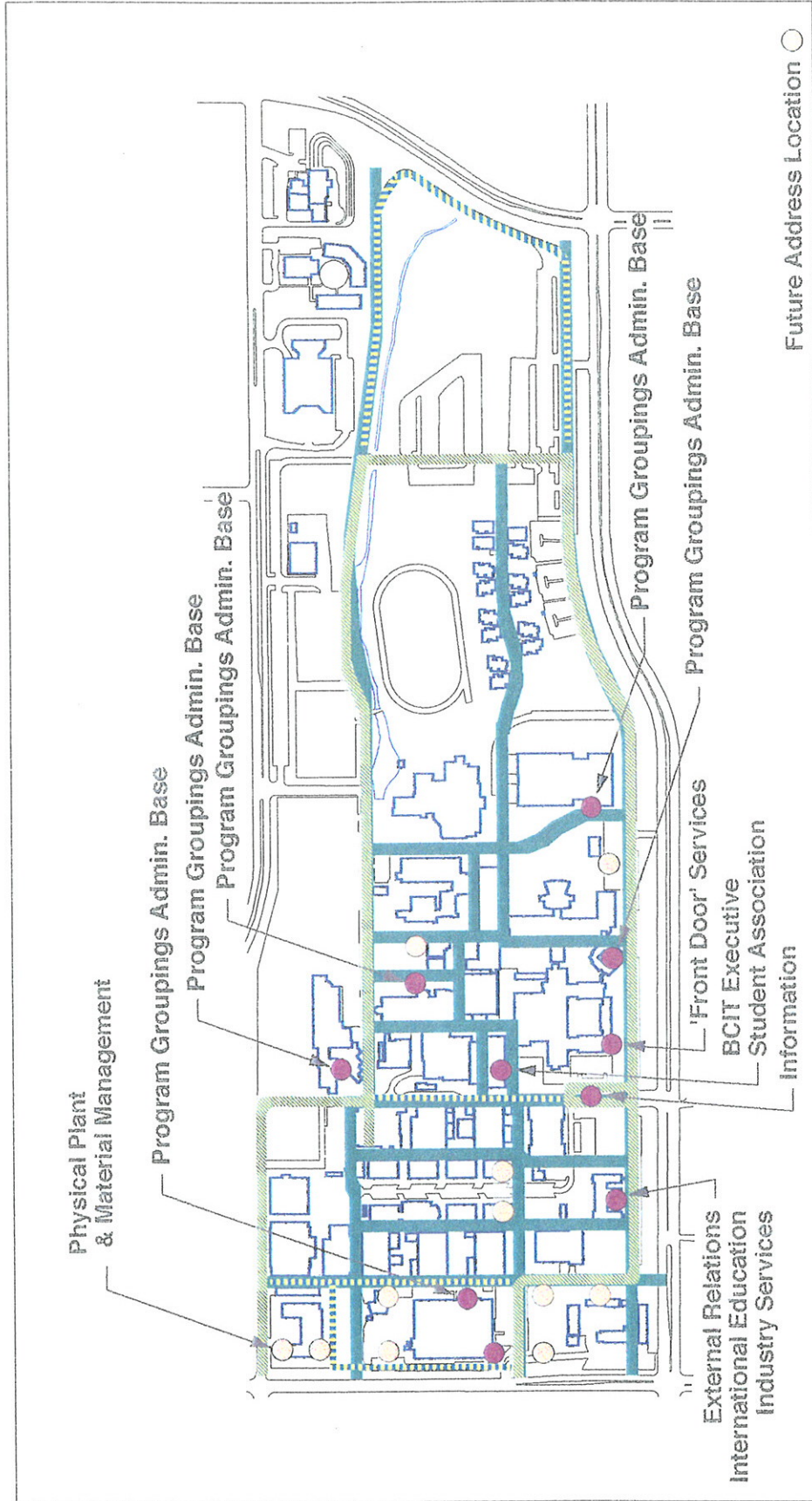
The internal circulation system both provides for the functional necessity of movement through the core campus area and also significantly contributes to the quality of campus life. By size and complexity the BCIT campus is analogous to a town. It is important that a large and changing population can orient themselves and locate their destinations in an unstressful manner. Further, the circulation system should support multiple layers of use; it should provide abundant opportunities for learning activity to extend informally beyond the formal instructional settings. Circulation space should also provide for the social and informal recreational needs of students.

BCIT commissioned the study, *Physical Access Survey - Deficiencies and Recommendations*, 1995 which is the basis for the multi-year *Facilities Access Plan* which BCIT is incorporating in its annual minor capital plans. BCIT has also adopted a set of *Safe Campus Initiatives*.



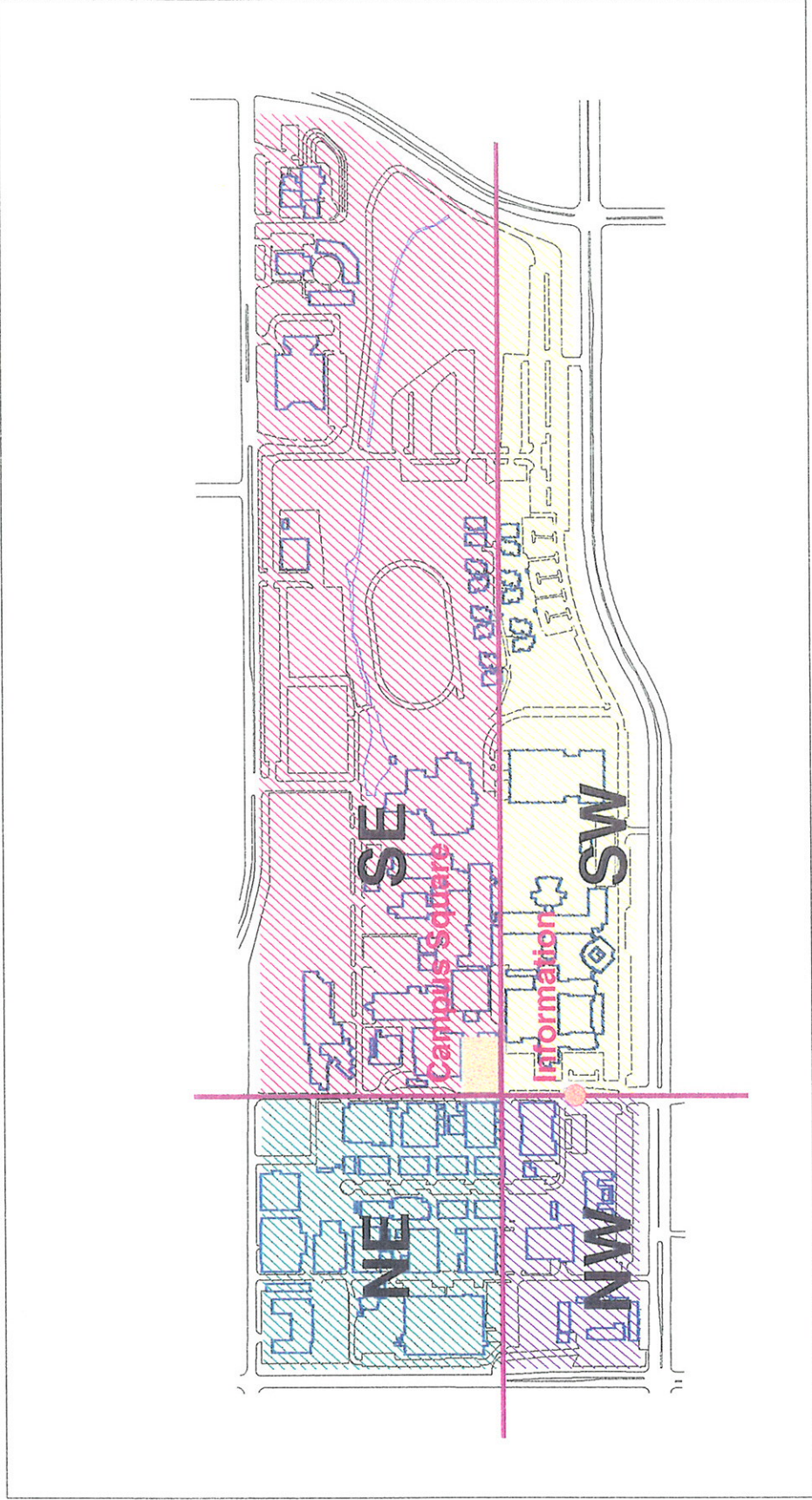
4.1 Internal Access - Pedestrianways





4.2 Internal Access - Addresses





4.3 Internal Access - Wayfinding



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5.0 Campus Centre

Principles:

The geographical centre of the campus should be developed to correspondingly provide a functional and symbolic focus - a heart to the campus.

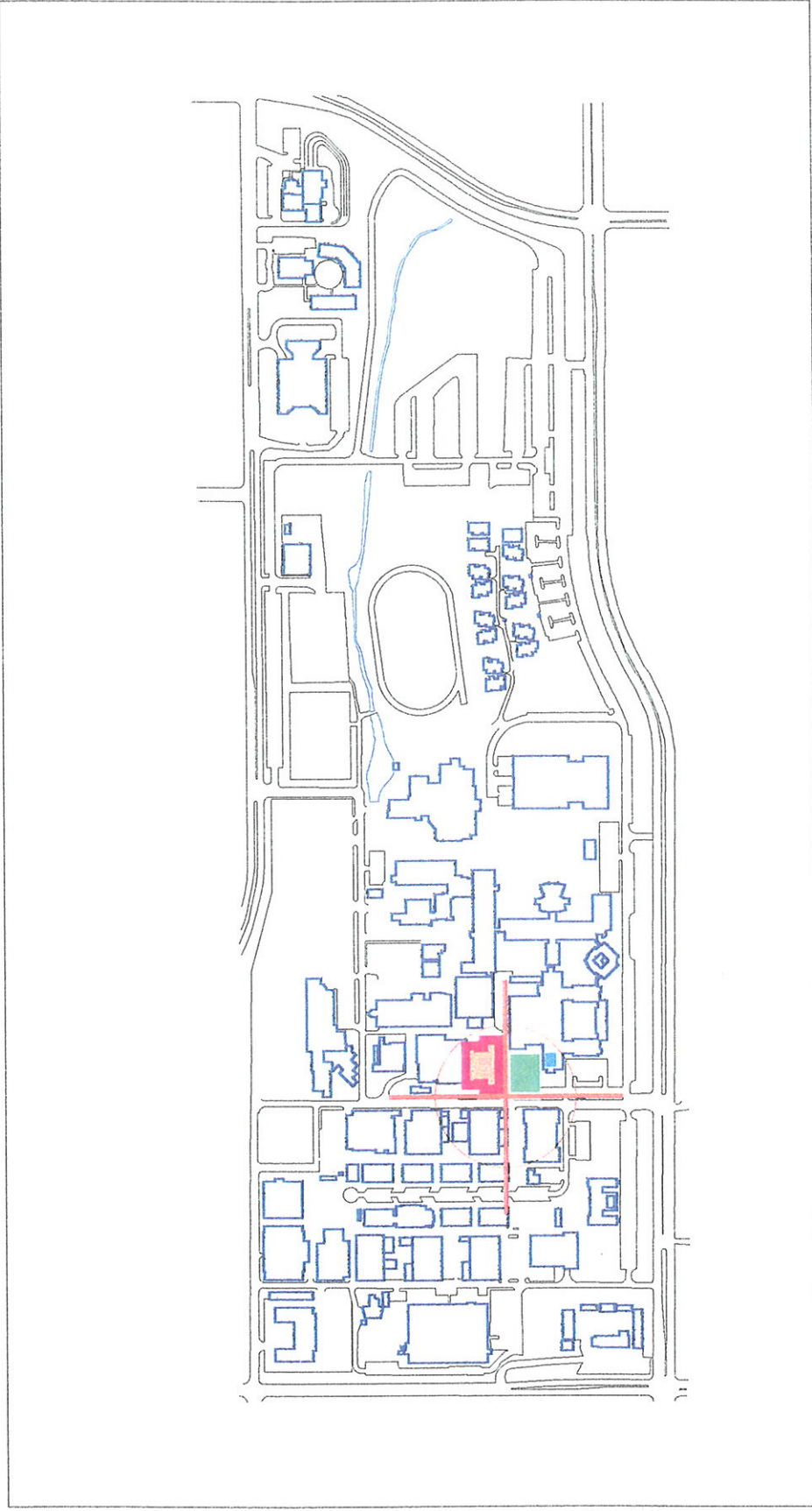
Guidelines:

- The campus centre should include a significant outdoor space - the Campus Square - which is designed for everyday informal use as well as for major BCIT events.
- The campus centre should also incorporate a major interior space with a similar multi-use role.
- The campus centre should be developed with facilities that can concentrate core common services such as retail, food services, personal services, etc, as well as institute services such as admissions, security, bookstore.
- The campus centre should be associated with the centre of student managed activity including SA offices and meeting facilities.
- The campus centre should be associated with the senior administration and incorporate facilities to support interaction between the executive and the BCIT community.
- The campus centre should provide a social and meeting focus for faculty and staff.
- The campus centre should provide facilities for conference functions engaging outside/partner agencies and participants.

Rationale:

The need to develop a campus centre was markedly evident at the time of preparing the Campus Master Plan in 1989. Goard Way presented a physical and symbolic divide between the two previous institutions against which the campus centre was conceived as unifying link. Further, a foremost concern expressed by users was the lack of a campus focus which detracted from the quality of campus life. Finally, the original rationale for the form of campus centre development exploited the potential to reapply the underutilized, then named, Food Services Bldg. to add specifically needed facilities. Much progress has been made in establishing the campus centre, but it remains an evolving project - the campus square requires further development with additional amenities, landscape, and a possible central identity feature. There remains scope to expand the facilities and central services surrounding the campus square.

The Campus Centre is not intended to include all food services. Existing secondary centres exist in NE-1, SE-1, SW-1, SE-12 and SE-16 and these should be augmented as required by demand to provide convenient distributed service.



5.0 Campus Centre



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6.0 Functional Order

Principles:

The campus should be planned to optimize functional relationships and to provide an orderly and logical spatial order that can assist in the development and delivery of BCIT programs and services, and can enhance operational effectiveness.

6.1

'Front Door' Services Guidelines:

- There are a limited number of accommodation options for organizational components to be located and made visible and accessible at the main 'front door' to the campus from Willingdon - these locations should be assigned to components yielding the greatest institutional benefit from these locations.
- The functionality of 'front door service' locations should be enhanced with appropriate signage, vehicle access and short term parking, and the establishment of a quality of image/character consistent with BCIT's mandate and strategic directions.
- Where possible 'front door' services should also be visually connected to the Campus Square.

6.2

Zones Guidelines:

- When feasible, projects should attempt to increase the coherence of thematic program zones to increase the synergy and effectiveness of related functions.
- Zones should be conceptualized as loose areas of affinity rather than as rigid or departmentalized boundaries.

6.3

Instructional Facilities Pool Guidelines:

- Common instructional facilities, primarily class/lecture space, should be located along the north-south spine, in relatively central locations to optimize access.
- Common instructional facilities should be pooled in relatively large clusters to assist in managing the extended scheduling access required for high facility utilization.
- Computer labs should be clustered in groups of six labs minimum to facilitate technical support.

6.4

Learning Resources Guidelines:

- Student learning resource facilities (e.g. library, group study space, open access computer labs, media resource centres, etc.) should be located in key positions throughout the campus as practical and individually located along main circulation routes so as to facilitate access and increase their visibility.
- Learning resources intended primarily for curriculum development by faculty should be located in an integrated cluster in a relatively central location. If possible the location should be close to the library and to Computer Resources.

6.5

Office Nodes Guidelines:

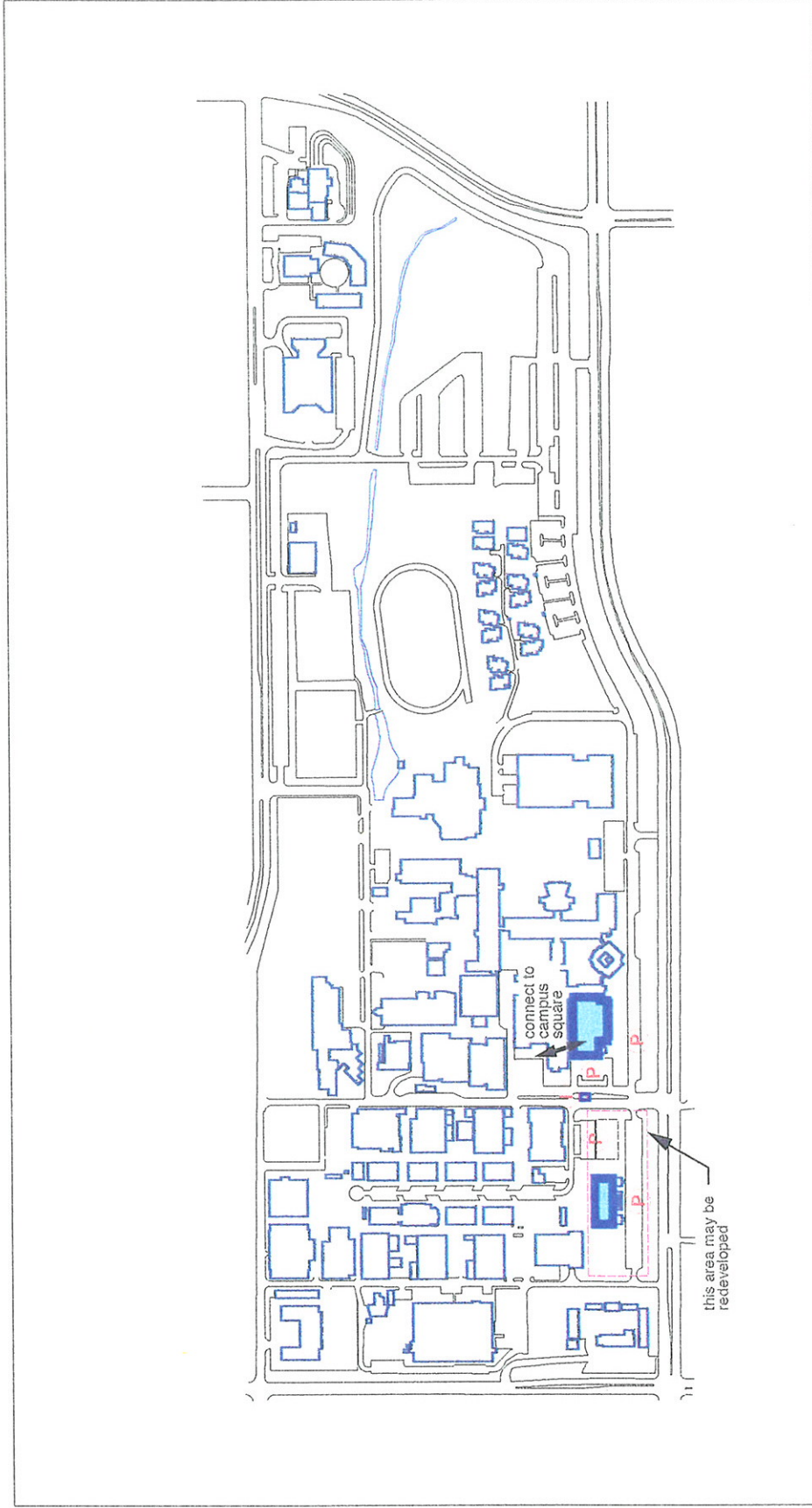
- Office space should be developed in nodes, ideally accommodating a minimum of 50 persons with an upper limit in the order of 150.
- Office nodes should be located where they are easily accessible from both the campus edge roads and main core area pedestrian routes.

Rationale:

The guidelines in this section are intended as a pragmatic set of intentions to be applied to circumstances where uses or component locations are being modified. Several issues noted above will need to be the subject of more detailed functional planning as a pre-requisite to formulating capital/facility proposals, for example, an *Office Accommodation Strategy* was prepared to direct a range of allocation and development projects concerning office facilities.

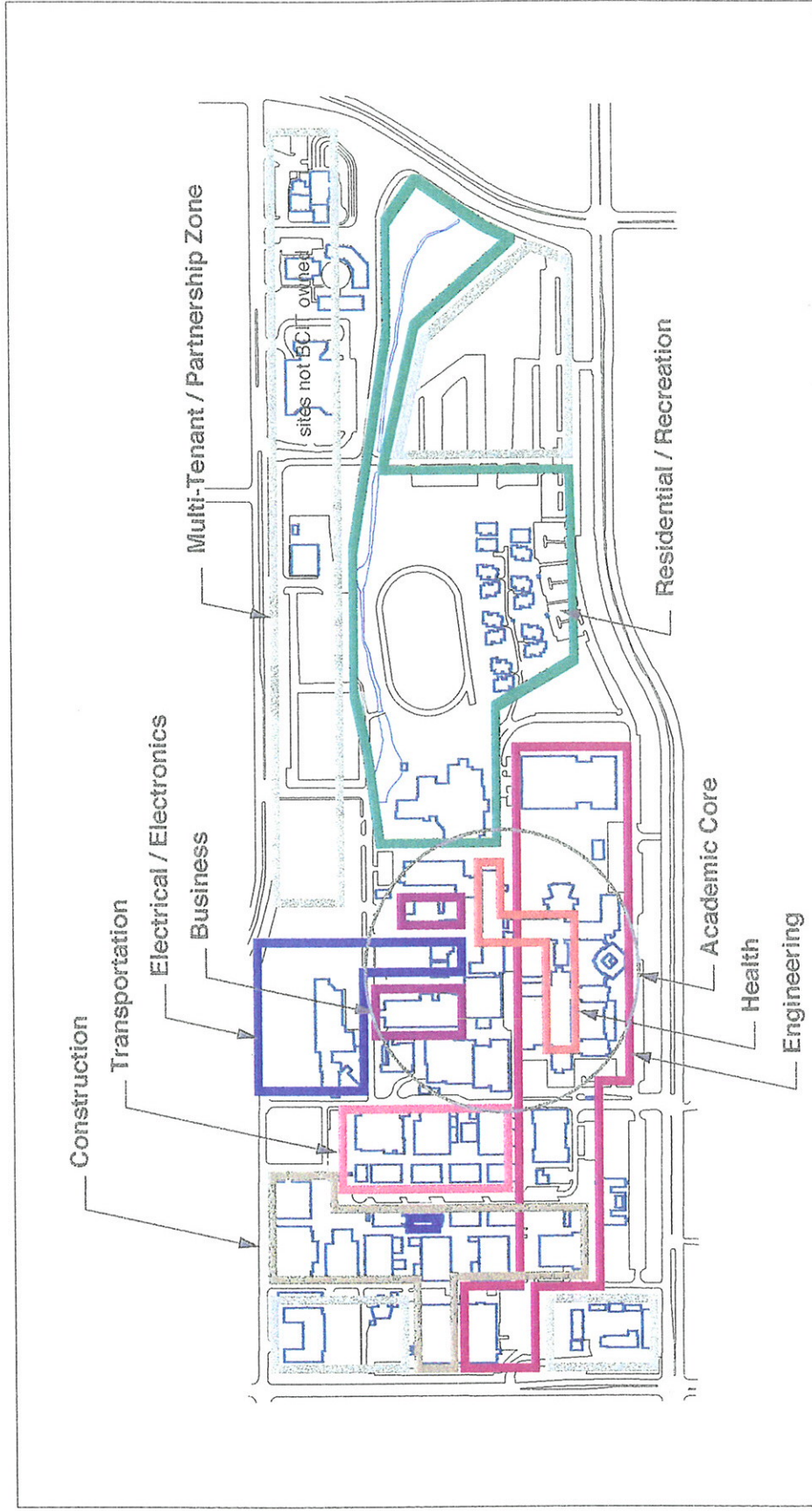
One aspect of functional order issues are benefits that derive from clusters of facilities above a certain threshold scale. For example, larger capacity office nodes allow for a more effective distribution of supports ie: meeting rooms, copy centres, reception services, etc.; BCIT suffers in trying to extend the utilization of facilities that are distributed in a number of separate buildings - a situation that would be improved by larger (eg. classroom clusters in central locations).

The intention to enhance particular functional order directions is related also to the issue of reserving development sites (see above). For example, the Campus Master Plan identifies particular site areas proposed to be reserved for future expansion development around the program areas of Construction, Transportation, and Electronics.



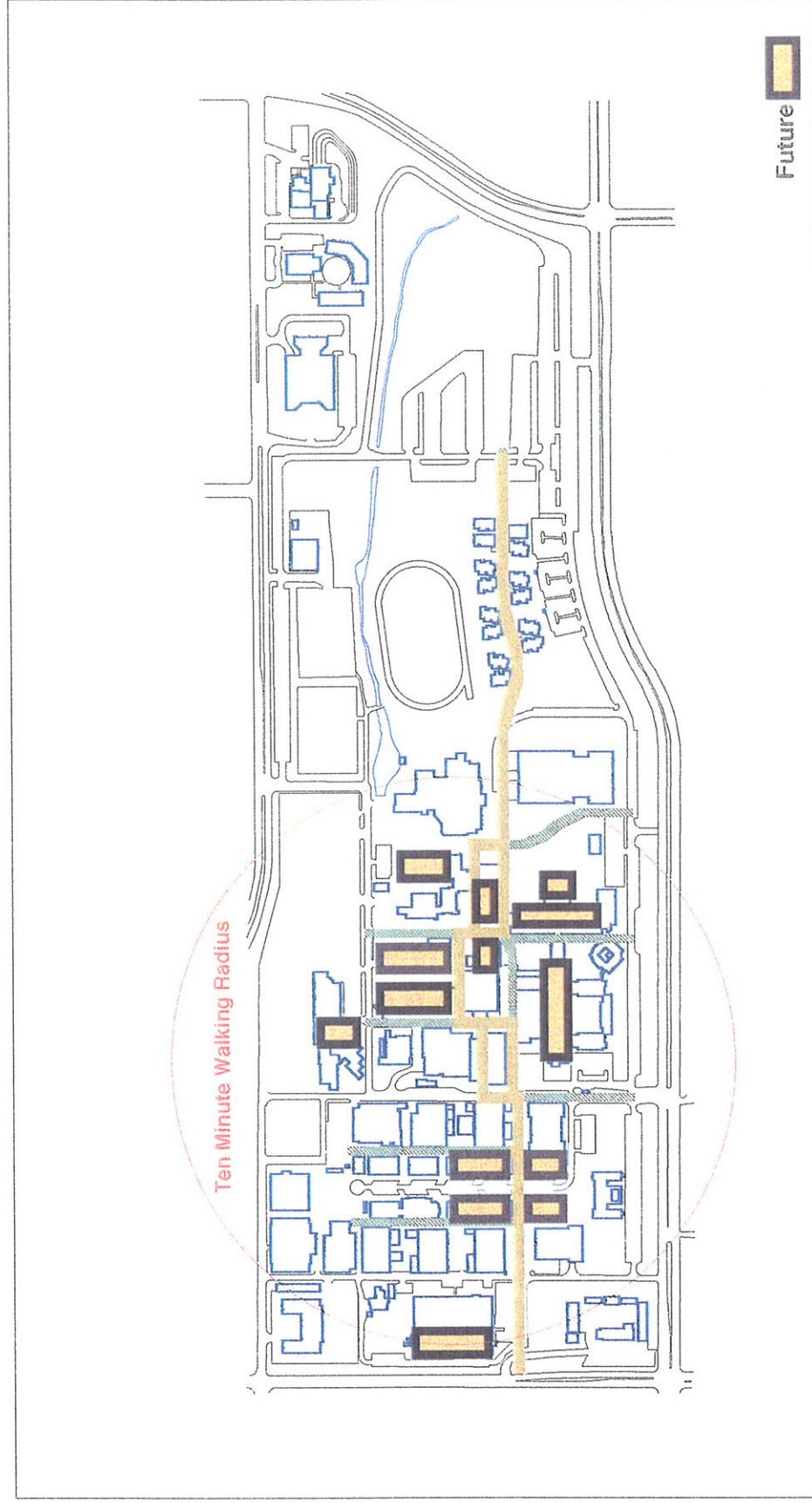
6.1 Functional Order - 'Front Door' Services





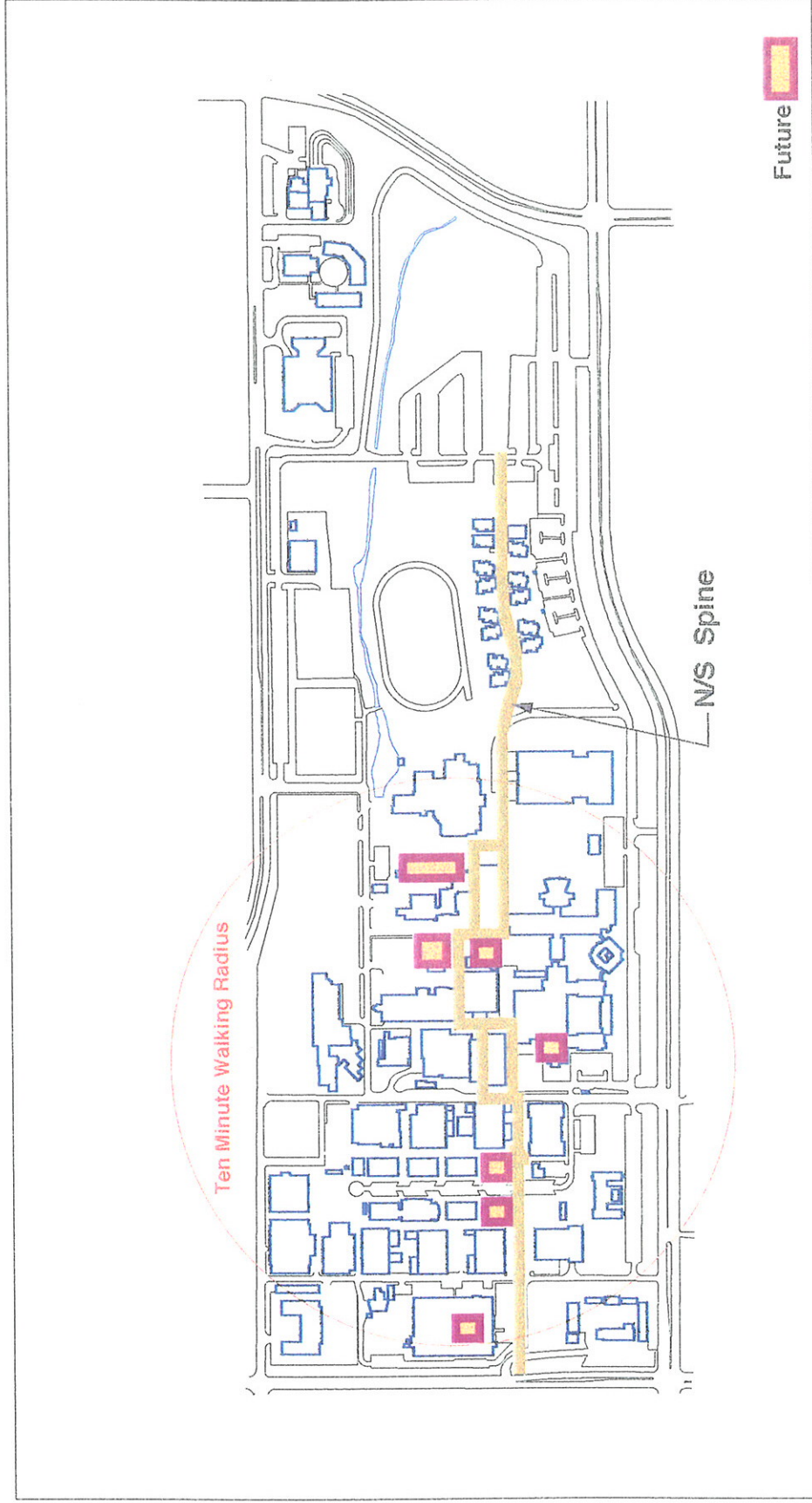
6.2 Functional Order - Zones





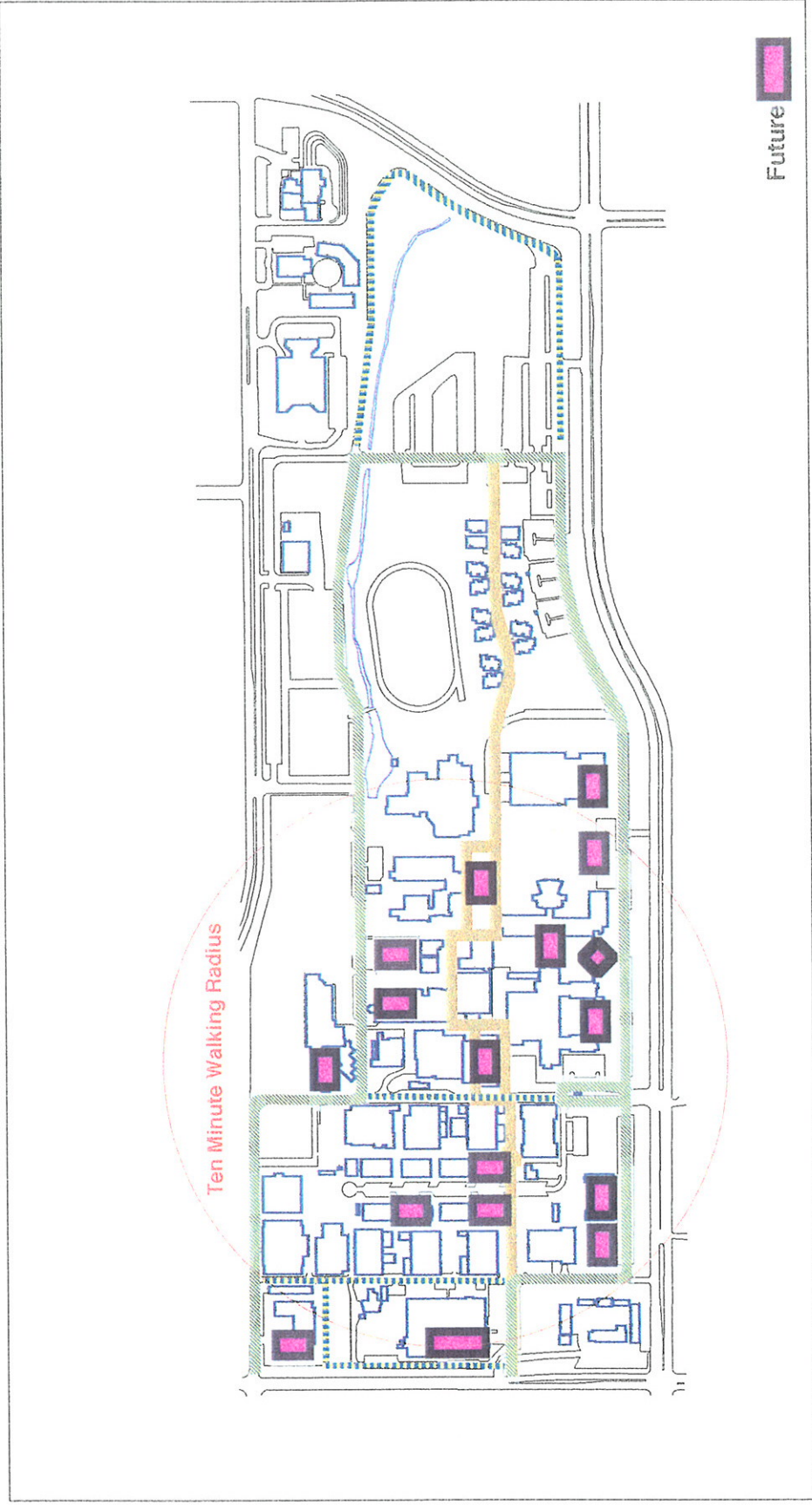
6.3 Functional Order - Instructional Facilities Pool





6.4 Functional Order - Learning Resources





6.5 Functional Order - Office Nodes



7.0 Service Functions

Principles:

The campus plan should integrate the requirements of service functions which provide essential supporting operations. Service functions require both facility resources and a movement network throughout the campus.

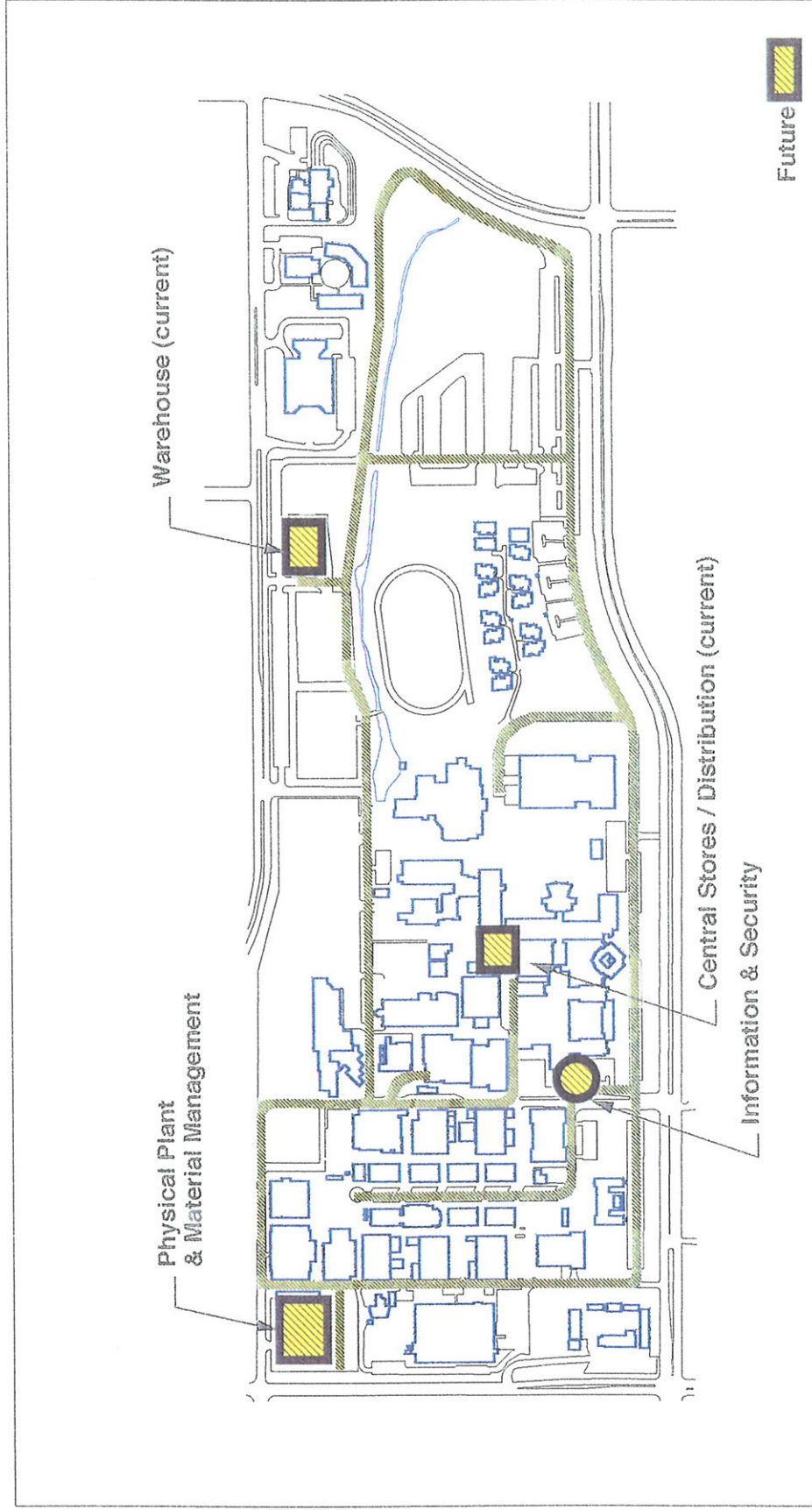
Guidelines:

- Physical plant operations should be consolidated and located in the site building at the northeast corner of the campus.
- Material management operations should be consolidated in this same location.
- BCIT should maintain the system of service vehicle routes throughout the campus. In some locations these may share alignment with pedestrian routes as long as safety issues are recognized in the detailed design.

Rationale:

Servicing a complex campus is a vital concern. If service issues are overly reflected in campus design the physical character usually suffers, however, these services are an essential aspect of a functioning campus.

The use of the northeast site provides appropriate facility accommodation for Physical Plant and Material Management operations. This will also significantly reduce the requirement for truck traffic into the campus core area.



7.0 Service Functions



8.0 Utilization & Upgrade Strategies

Principles:

The campus plan should be based on a recognition that development will occur incrementally - that is primarily through many individual projects of a relatively small size. Further, a building stock of generally modest quality which is regularly in need of cyclical upgrade plus the need to address an inherently high rate of facility churn, produces conditions where there will constantly be pressures to change aspects of the campus and its buildings - the campus will always be a work in progress. The Campus Master Plan should make a virtue of this necessity.

8.1 Coordinated Increments

Guidelines:

- Each individual, incremental development project should be planned and designed in detail to reflect its context and the overall objectives and directions of the Campus Master Plan. This implies that each project will incorporate both internal or specific local objectives plus wider based global campus factors.
- Specifically each development project should attempt to support the following five overall interests:
 - the advancement /reinforcement of the campus development principles outlined above;
 - the increase of facility utilization;
 - the optimization of congruence between functions and building shell characteristics - particularly ensuring projects 'husband' the maintenance and use of specialized facilities;
 - the upgrade of deficient conditions (building, site, and infrastructure)
 - advancement /reinforcement of the environmental guidelines documented in the report, *Environmental Guidelines - British Columbia Universities, Colleges & Institute Facilities, 1995*.

8.2 Functional Alignment

Guidelines:

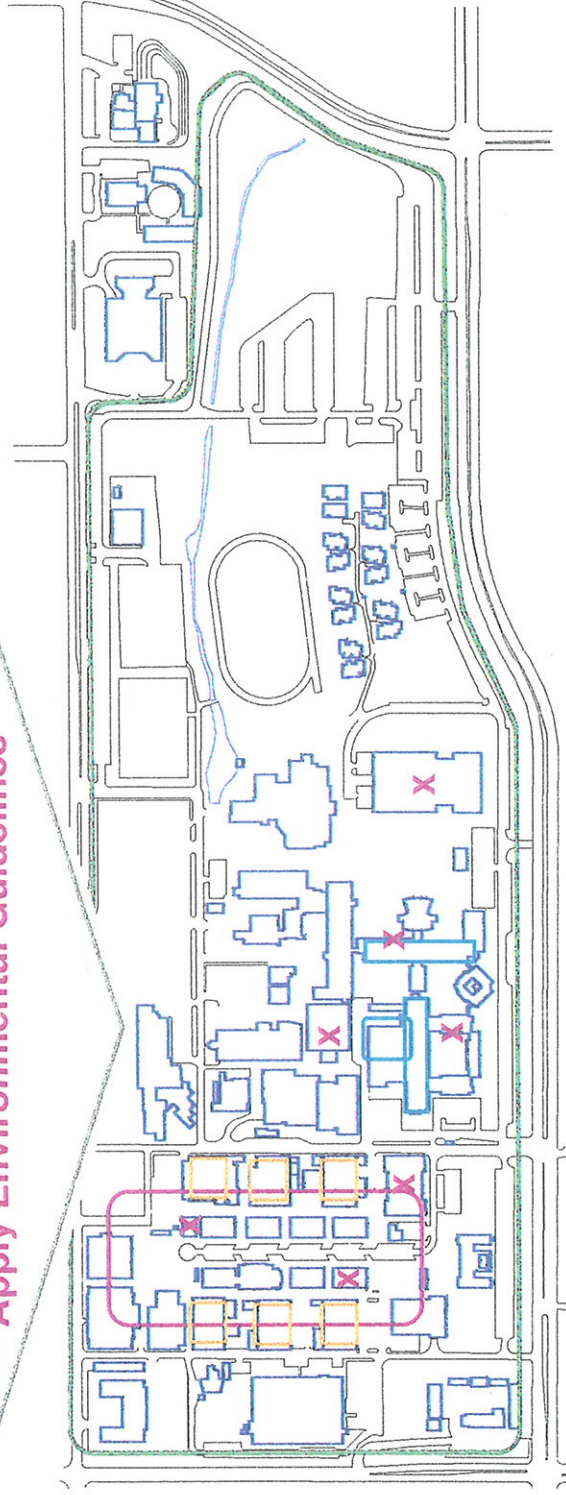
- The Campus Master Plan should identify functional alignment initiatives (see section 4.0) that meet several criteria:
 - the issues have significance of relatively wide scope - eg. for the campus as a whole;
 - the issues have a level of complexity or interconnected aspects that require a strategic response;
 - the issues affect a number of organizational components, thereby requiring consensus and coordination.
- Stating the converse, the Master Plan is not intended to be the repository or champion of all proposed projects, but rather the framework that assists BCIT to respond intelligently to emerging development project proposals.

Rationale:

It is highly unlikely that BCIT will ever be in a position to demolish and rebuild on a large scale, particularly as it has demonstrated over the past few years considerable success in its coordinated approach to incremental upgrades, and given the competition for scarce provincial capital. The Campus Master Plan is founded on the premise of doing what is feasible with what is available - it is promoted also as the strategy with the greatest potential for yielding successful outcomes.

On the issue of the appropriate scale of individual project to be incorporated into the Master Plan, it is posited that the document has greater long term value as a frame work plan rather than attempting to address all prospective project issues many of which are of temporal relevance.

Advance Planning Principles
 Increase Utilization
 Optimize Shell Characteristics
 Redress Deficient Conditions
 Apply Environmental Guidelines



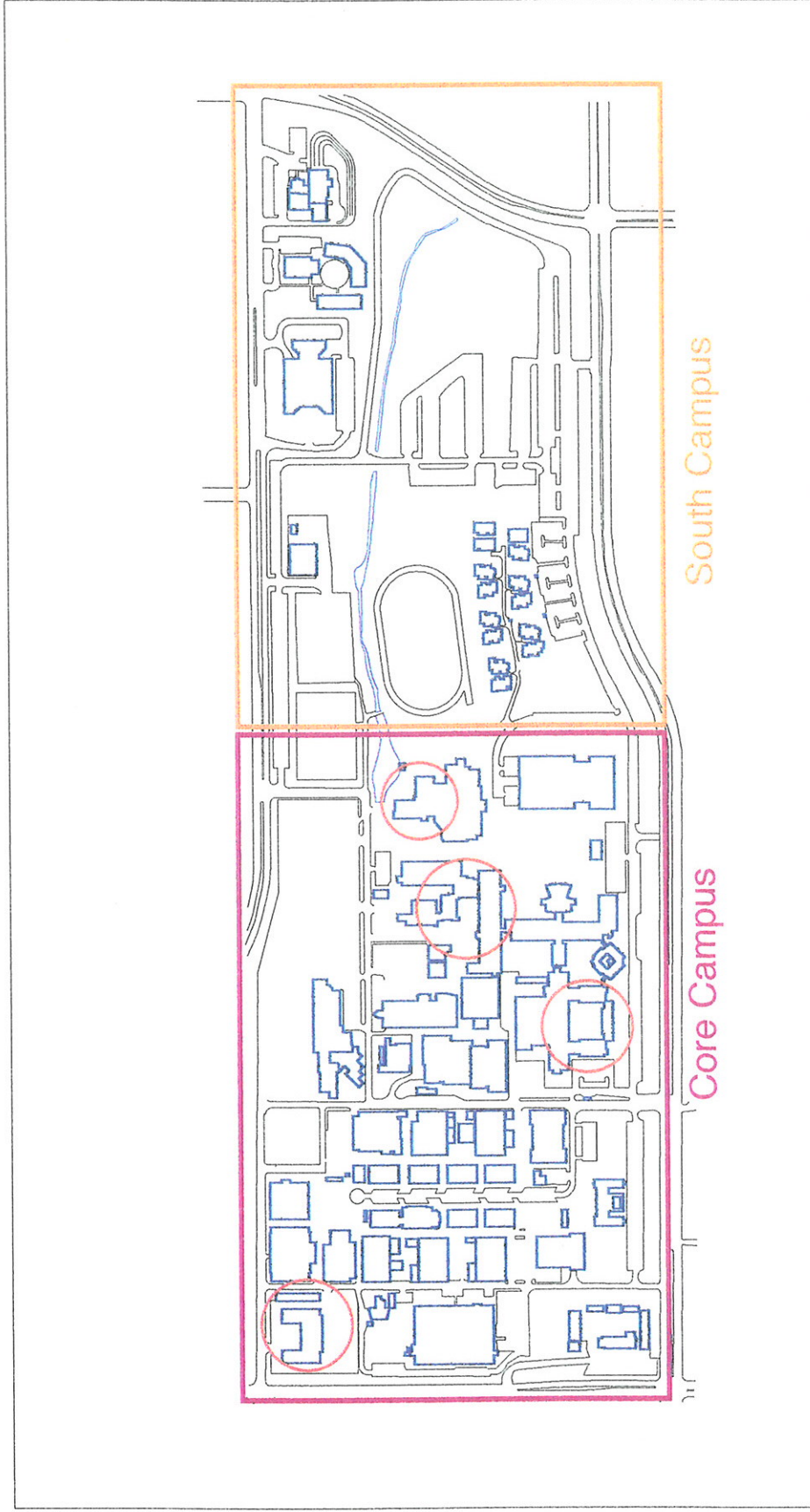
8.1 Upgrade Strategies - Coordinated Increments



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Holson Bakker • Cornerstone • Associated Architects

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8.2 Upgrade Strategies - Functional Alignment



4.0 Functional Alignment

Over the course of preparing the Campus Master Plan in 1989 and the following period during which priority facility projects were realized, a wide range of functional/facility misalignment conditions were identified. This dimension is less critically a feature of the short term future addressed by this update of the plan. However, typical of an institution characterized by change, or facility 'churn', a number of proposed directions are outlined in this section. These proposals relate directly to development principle 8.0 in the previous section and the discussion there is relevant as to the criteria for what is included in the Master Plan as opposed to being left to the process of individual project or operational planning.

4.1 Material Management and Physical Plant

Consistent with the 1989 Campus Master Plan, this update proposes that Material Management (Purchasing, Central Stores, etc.) and Physical Plant operations be relocated in the northeast corner of the campus. In the near future this should be feasible; BCIT owns the property on this corner and leases governing current uses are short term .

This development will have many benefits:

- each of the organizational units will have a consolidated operation, further, functional relationships between the two will be improved;
- truck traffic into the central campus will be significantly reduced;
- space will be released in important locations to allow for other prospective developments; it may be possible at a future time, if required by other site needs, to abandon the Warehouse.

Detailed planning for this project is required to finalize a range of functional issues such as the inclusion of other components, the best organization of truck circulation and loading, and use of the west part of the site for parking and/or redevelopment.

4.2 Student and User Services

Three types of services are considered.

4.2.1: The concept of integrated "front door" services has been under consideration for a number of years. The informal term 'one-stop shop' is commonly used. Functional components encompassed include:

- registration and admissions;
- academic advising and some counseling services;
- testing and special needs services;
- student records;
- financial aid and awards;
- general information and orientation - reception centre functions;
- automated kiosks; and
- campus tours.

The location for this group of functions centres on the existing admissions area in SW-1, possibly involving the enclosure of the walkway or the courtyard space.

At least two obstacles have deterred complete endorsement of this concept:

- Operational change in this area has led to uncertainty as to future requirements - the potential to deliver many of these services remotely using information technology, and the Province's previous initiative (since abandoned) to develop a common intake service agency are dimensions of the past and current context;
- The current facilities are not easily converted to a conducive functional plan (ie. shallow plan space with double loaded circulation located on two levels) adding to the implementation complexity and requiring a level of capital funding which has been difficult to justify in competition with other project needs.

Champions of the concept posit the continued importance of personal service, point to the fact that many other institutions have continued to develop these centres (eg. recent SFU project), and cite the experience of many American colleges that have invested in major 'reception centres' that showcase the institute and form an important role in the (competitive) recruitment process.

Without firmly endorsing the priority of this proposal the Master Plan framework is intended to preserve the potential to realize the development and to foster further active consideration.

4.2.2: Space vacated in SE-16 by the SA with the completion of the Campus Centre is available for reuse. It is proposed that this location be planned around the theme of recreation and health services, incorporating concepts of community wellness. It may be feasible to consider a linked addition on the east side of SE-16 (development site 15) depending on detailed analysis of future programs and facility requirements.

4.2.3: A third service area concerns minor changes to the food and conference services. Ancillary Services has proposed changes to the service in SW-1 and a new outlet in SW-3 to add distributed capacity. Changes may also be considered in other areas, for example NE-1. The Rix Club has not proved viable in its original format and further consideration is required to decide its future alignment as part of BCIT's food service and conference capacity.

4.3 Educational Technology and Curriculum Development

BCIT's strategic planning includes a major commitment to the development of curriculum and its delivery in a manner consistent with emerging digital/communication technology. Among the functional requirements relevant to the Master Plan are : facilities to support consultation, collaboration and faculty training; facilities to support curriculum development activity, and technical resources. Current organizational units directly related to this initiative include: the LRU, Computer Mediated Learning Centre, Computer Resources, Distance Education, AV Services, and the Library.

At this time a definite facility project has not been identified except for the recognition that the LRU is inappropriately located in deficient facilities, and that core facilities could assist faculty training and collaboration. The location

on campus where facility modifications could occur to support emerging activities centres on SE-12 and SE-14. Space will be released in the lower level of SE-12 and SE-14 contains some available unfinished space. While further consideration of operational directions is needed, the intention of the Master Plan is to preserve a future development option.

4.4

Utilization Enhancement

The imperative to ensure facilities are utilized optimally derives from both internal and external factors - current resources need to be exploited to as great an extent as possible to support immediately emerging program requirements; in order to expand facility resources in the core area at a future time it will be necessary to demonstrate that operations conform to recognized utilization levels. While utilization rates at the Burnaby Campus have been increasing steadily since the 1989 Master Plan, BCIT has recognized the need to address systemic factors which constrain utilization. This has been addressed in the BCIT prepared study, *Learning Space Utilization Report*, May 1997. This report contains a number of recommendations (Section E), some of which involve the physical realignment of space, particularly:

- Examine the least utilized spaces and determine possible improvements or alternate uses;
- Convert poorly utilized rooms to use for group project work space;
- Install means of securely storing moveable equipment where this is the main obstacle to more flexible space scheduling;
- Convert 'captive' classrooms to alternate uses - replace in accessible locations as required by demand patterns.



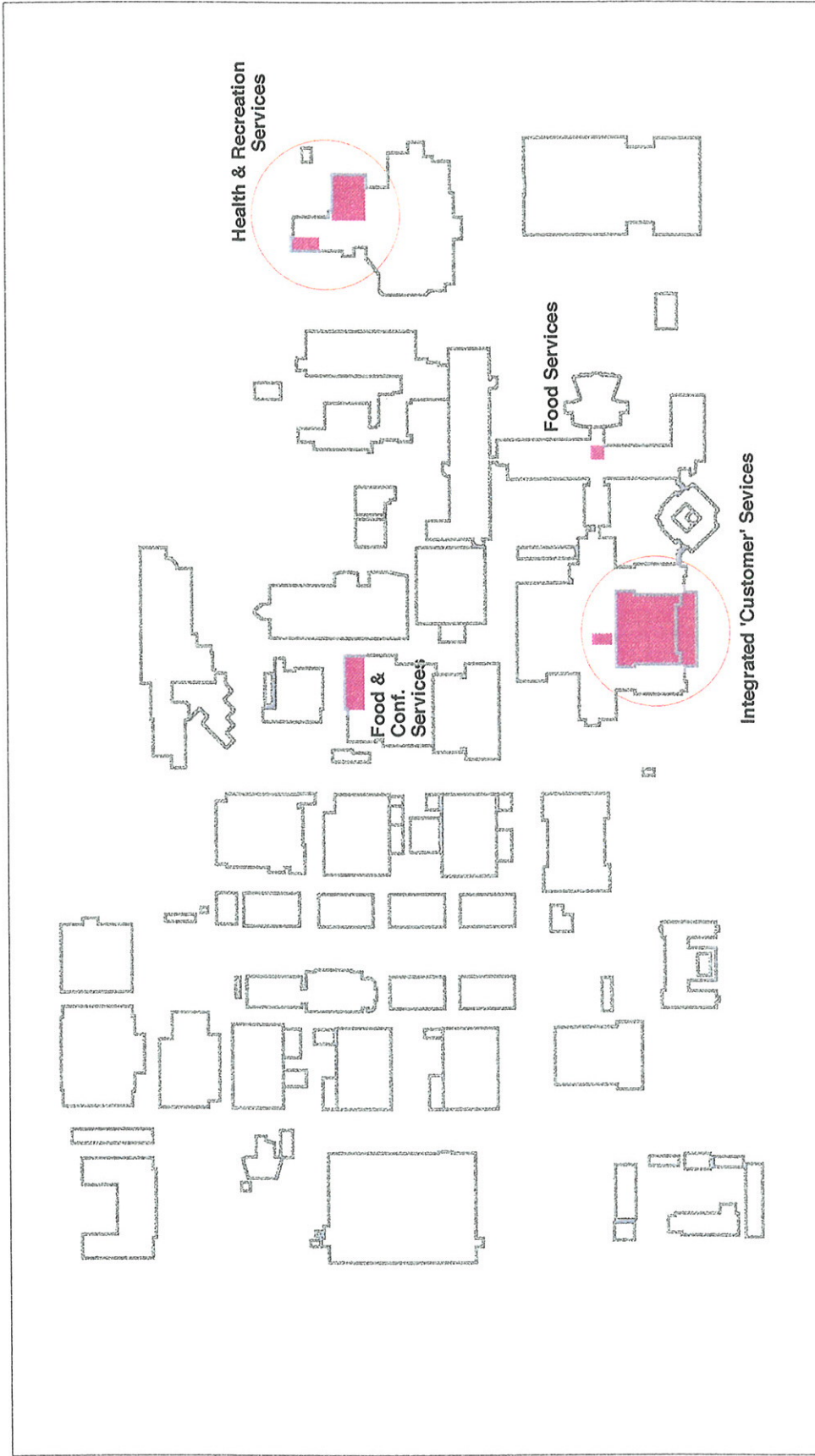
Functional Alignment : Material Management & Physical Plant Facilities



October 1997

BCIT • Campus Masterplan

Hotson Bakker • Cornerstone • Associated Architects



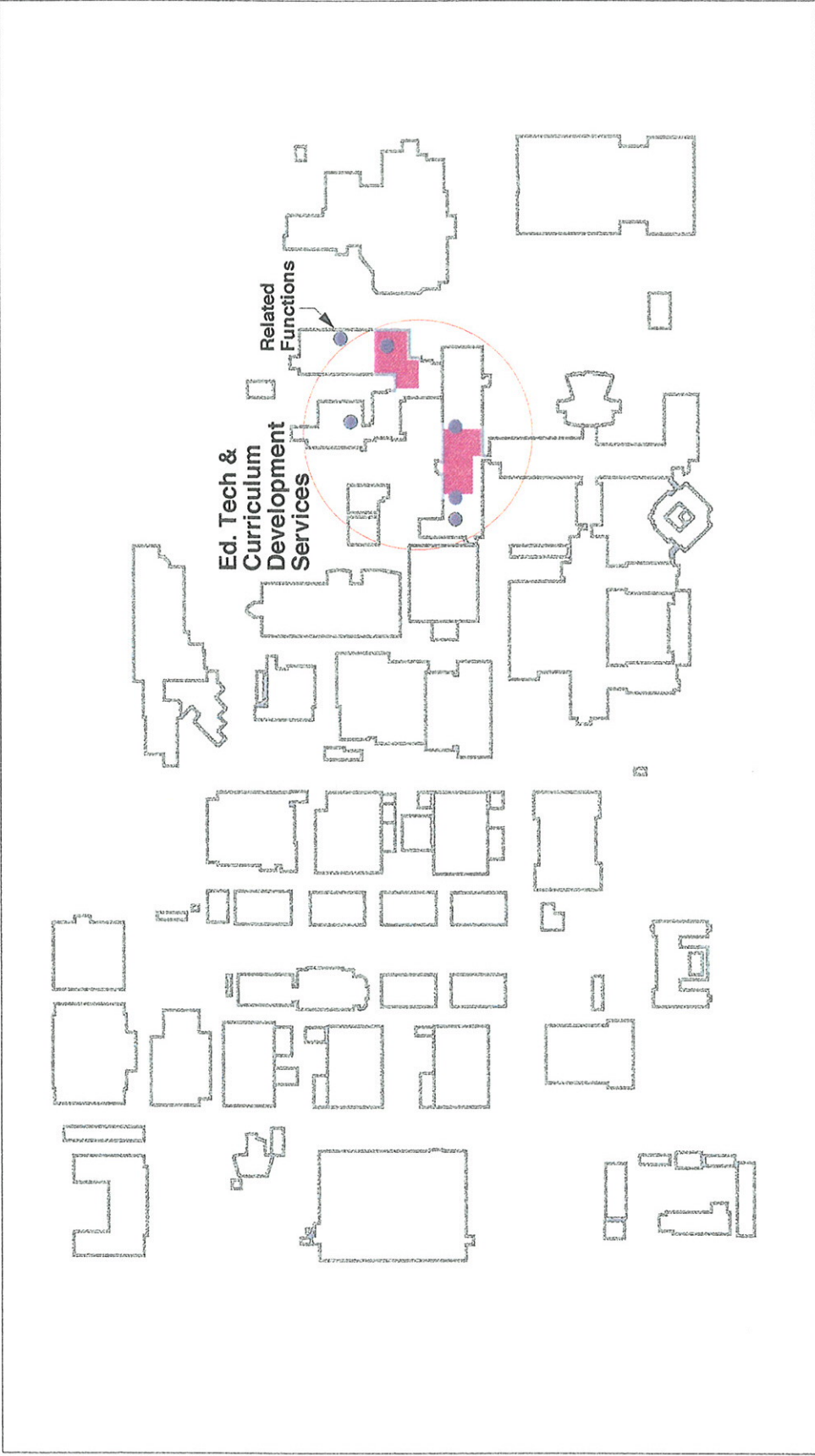
Functional Alignment :
Student / User Services



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Functional Alignment :
Ed. Tech & Curriculum Development Services



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5.0 Implementation Projects & Priorities

5.1

Thematic Priorities

The master planning process has led to the identification of three major thematic issues that will influence a range of policy and operational directions as well as physical planning and development initiatives over the next planning period. These are:

- campus access,
- facility utilization, and
- partnership development.

Each is discussed further below.

Campus Access

As the previous sections outline, demand for access to programs on the campus is expected to continue to grow while the capacity to expand surface parking has virtually reached its limits (a constraint compounded by the anticipated future loss of parking along Willingdon Avenue). Further, there are regional planning and environmental reasons for considering a broad approach to access planning; and a number of current problems suggesting specific physical modifications.

The approach reflected in the Master Plan is based on dual initiatives:

- adopting strategies that encourage and facilitate access in ways that reduce the relative reliance on private (particularly single occupant) vehicles, while,
- recognizing that private vehicles are still going to be the primary mode of transportation for the foreseeable future, developing means to expand and rationalize the campus parking supply.

Proposed Actions:

- Undertake a process that will lead to the implementation of higher parking fees (this will support both initiatives noted above);
- Implement an active program to encourage alternative access patterns (including transit, high occupancy pooling, bicycles, etc.), this can include a range of incentive mechanisms and facilitating measures such as organizing regional pick-up locations;
- Undertake a feasibility study for the development of structured parking on the east edge of the campus taking into account the potential for incorporating immediate and/or future multi-tenant facilities in such a development;
- Support Burnaby's development of an urban trail network;
- Undertake the development projects defined below.

Facility Utilization

Implementing changes to allow improved utilization of existing facilities will have immediate benefits for emerging program needs. Establishing utilization at recognized levels is also critical if BCIT is to generate support for its plans to rationalize and expand core campus facilities over time.

Proposed Actions:

- Continue developing an implementation plan in accordance with the recommendations identified in the BCIT prepared study, *Learning Space*

Utilization Report, May 1997;

- Undertake a full assessment of the feasibility of operating a *summer institute* with particular focus on International Education;
- Promote opportunities where underutilized facility time blocks can be used to develop partnership arrangements with other agencies for revenue and/or other mutual benefits;
- Implement the realignment projects outlined in Section 4.4.

Partnership Development

An important aspect of this Campus Master Plan update is the identification of land on the campus that could be developed through partnerships between BCIT and other agencies to provide facilities that can extend the educational and research (technology transfer functions) in accordance with the Institute's mandate, as well as to provide a diversified revenue base.

Proposed Actions:

- Ensure all key BCIT organizational units are aware of BCIT's planning directions and its partnership development guidelines (Appendix A). Also ensure awareness of the core development sites capacity and implement mechanisms to manage development of the core area land base to achieve the highest and best land use consistent with the *campus development principles*;
- In advance of entering into prospective partnerships for development, establish internal mechanisms for ensuring the exercise of due diligence, including monitoring land market value information and periodically setting threshold financial targets for lease revenue returns (BCIT will not sell any campus lands);
- At the appropriate time(s) design a proposal call process to gauge the market interest for multi-tenant development consistent with BCIT's policy framework;
- Integrate strategies for partnership development and those for improving campus access (one aspect of this is shared use parking development);
- Continue to liaise with City of Burnaby representatives to reflect City concerns and to avoid conditions that might impede BCIT's development objectives.

5.2

Project Priorities

This section concerns priority projects of a more specific nature that BCIT will promote during the next time frame - generally in the order of five years. Some projects are relatively well defined, others will require further preliminary analysis to assess the viability of the project.

New Building Development

New building development is not a major thrust of this Campus Master Plan update although in the longer term expanded facilities will be required. Two projects relevant to the planning time frame considered are as follows:

- Multi-Tenant Applied Research Building (also known as the *Technology Place* project):
 - it is anticipated this building will be financed by DPI;
 - pre-design planning is required;
 - the site will be selected after detailed analysis from the available development sites identified in Section 3.0.
- Tech Block 2:
 - while it is not expected that government funding support for this project would be available in the near future, Tech Block 2 remains

the most logical next development south of Goard Way - the development would both consolidate electrical/electronics and allow for rationalization and multiple program realignment and expansion in several existing buildings (SW-1, SW-3, SE-1, NE-25, NE-1, SW-9);

- planning for other projects should be consistent with the ultimate realization of Tech Block 2;
- development site 13 has been designated.

- Construction Centre / Transportation Centre:
 - development sites 3 and 4 currently contain low density uses in buildings of deficient quality; future redevelopment of these sites is proposed with higher density structures to accommodate lab/shop, class/lecture and office space;
 - the provisional names for these developments are the Construction and Transportation Centres to support the adjacent functions and the *program groupings* realignment which combines trades and technologies;
 - the development would greatly improve the quality and integration of the campus north-south, and would advance the guideline that promote the development of significant functional nodes along the north-south spine.
- Canada Way - Willingdon Avenue Corner Site;
 - it is expected that BCIT will initiate a process leading to the development of this important site during the planning time frame;
 - the process for defining the project will itself need to be designed; aspects of this process will be to ensure 'best fit' private sector proponent proposals are solicited and that BCIT maintains tight control of the evaluation and contractual relationships that ensue.

Functional Alignment Projects The projects identified in Section 4, and listed below, should be advanced. (this list is not intended to encompass all minor capital projects that will emerge to address specific component accommodation modifications)

- Material Management and Physical Plant Relocation and Consolidation;
- Student and User Services Alignment and Integration:
 - Integrated Front Door Services,
 - Recreation and Health (Wellness Centre) Services,
 - Food and Conference Services (minor modifications);
- Educational Technology and Curriculum Development Alignment and Integration;
- Utilization Re-alignment Projects:
 - see Section 4.4

Building Upgrade Projects BCIT should continue its building upgrade program (in addition to cyclical maintenance/upgrade), particularly in conjunction with other realignment projects. It is proposed priorities for the next time frame include the following:

- Remove remaining portables.
- Complete the internal installation of the fibre backbone linked to all local area networks.
- Develop strategies to seismically upgrade the remaining critical buildings

in conjunction with other project objectives (ie. particularly SW-1; SW-3 ; SW-9 ; NW-6 ; SE-8 ; SE-12 ; SE-14).

- Complete the room numbering and internal signage program.
- Continue the program outlined in the BIT report *Facilities Access Plan 1996/97 to 2000/01*, (based on Physical Access Survey, Access Design Inc., 1995).
- Continue to incorporate into all upgrade projects relevant features recommended in the report *Environmental Guidelines - British Columbia Universities, Colleges & Institute Facilities*, 1995.

Site & Infrastructure Projects BCIT should continue its site and infrastructure upgrade program (in addition to cyclical maintenance/upgrade). It is proposed priorities for the next time frame include:

- Access
 - Implement the concept of a major vehicle entrance in each quadrant :
 - realign the SE entrance when feasible;
 - develop the NE entrance in conjunction with the corner redevelopment;
 - develop major 'gatepost' signage at each entrance;
 - Plan for the relocation of the traffic light on Willingdon to serve the main campus entrance at Goard Way.
 - Upgrade the Edge Roads in the south and east sectors.
 - Expand 'front door' parking on the west side of the campus.
 - Upgrade the quality of the south parking lots (paving, lighting, signage, etc.).
 - Develop a transit loop to bring buses on campus.
 - Continue to upgrade the north-south pedestrian spine (eg. to south parking lots).
 - Extend the canopy system south of the Campus Centre.
 - Continue the campus signage program (removing incompatible existing signage).
- Site Improvements
 - Continue the program for developing the Campus Square. Features envisaged include additional soft landscaping, outdoor furniture and/or other sitting facilities, and a possible central identity or amenity feature.
 - Upgrade the yard area east of Bldg. NE-16.
 - Plan to remove the *R-2000 Building* from its current location.
 - Consider interim uses and minor improvements to the Canada Way-Willingdon corner.
 - Plan for the commemorative dedication(s) of selected outdoor areas (eg. part of Guichon Creek).
- Utilities
 - Complete the program of buried utility upgrades recommended in the report: *BCIT Infrastructure Review*, Reid Crowther, 1993.
 - Undertake the electrical system grounding and transformer upgrades recommended for the north campus.
 - Continue the program of site lighting improvement and light standard replacement.

Appendix A: Guidelines for Development Proposals on the Burnaby Campus

Purpose This document provides a set of principles for guiding any development on the Burnaby campus lands which may occur in conjunction with other organizations.

Background BCIT recognizes a significant resource in its Burnaby lands, and prudent development of parts of the campus, consistent with BCIT's mandate, can be advantageous.

While it is recognized that any development proposals must be analyzed on an individual basis, the following guiding principles are offered to assist with such determinations.

Guiding Principles Whereas, the Board has resolved to acquire ownership and control of all lands within the four corners of the existing campus, it is a fundamental principle that BCIT will not sell land on the Burnaby campus, but may consider other forms of use such as leases.

Any development of the Burnaby campus lands must be compatible with the Institute's mandate, mission, campus master plan, and strategic objectives.

The administration will ensure that due diligence processes are undertaken, prior to the Institute committing to any individual development proposal.

Development plans should assist BCIT in meeting its objective of diversifying the Institute's revenue sources.

Development on campus involving other organizations must provide for signage that is consistent with Institute policy and which enhances BCIT's image as the premier provider of technology learning and transfer in the province.

In considering individual proposals, BCIT will seek to work with organizations who demonstrate elements of the following as part of the development, ie. those organizations who:

- hire BCIT graduates and host student projects;
- provide faculty with professional development opportunities;
- lend guest lecturers with current industry experience;
- demonstrate dedication to enhancing learning opportunities for British Columbians;
- provide opportunities for technology transfer to or from the organization;
- demonstrate commitment to the human resource development of B.C.;
- create possibilities for sharing space with BCIT;
- enhance BCIT's image;
- provide opportunities for BCIT to sell Institute services such as library, recreation, etc.;
- offer royalties or lease revenues to support BCIT in meeting its mandate.

Contractual arrangements will clarify the rights and expectations of all parties and secure BCIT protection from unwanted liabilities prior to acceptance of a development proposal.

Appendix B: Current Conditions Assessment

B.1

Building Conditions

The table following provides a summary of the condition of the existing campus building stock. The material is intended to provide an overview only to illustrate the context for upgrade and cyclical maintenance priorities over the next five to ten year period.

The sources of the assessment are:

- inventory of development projects;
- BCIT Campus Master Plan - Background Analysis, 1989
- Seismic Evaluation Report - Choukalos, Woodburn, McKenzie, Maranda Ltd., 1990
- Seismic Evaluation Report - Sandwell, 1995
- Environmental Guidelines - British Columbia Universities, Colleges & Institute Facilities, 1995
- BCIT Physical Plant staff input

B.2

Site and Infrastructure Condition

In a parallel format site and infra structure has also been assessed in an overview summary format.

The sources of the assessment are:

- inventory of development projects;
- BCIT Campus Master Plan - Background Analysis, 1989
- Infrastructure Review Report - Reid Crowther, 1993
- Environmental Guidelines - British Columbia Universities, Colleges & Institute Facilities, 1995
- BCIT Physical Plant staff input

Building Condition Overview

November 1997

Condition 1: Excellent 1 conforms to current standards
 Condition 2: Good 2 no significant deficiencies
 Condition 3: Average 3
 Condition 4: Deficient 4 upgrade req. within 10 years
 Condition 5: Critical 5 upgrade req. within 5 years

		Architectural						Structural		Mechanical		Electrical		
Building	Planned Building Life Category	Functional Alignment	Accessibility / Safety	Bldg. Envelope: Roof	Bldg. Envelope: Walls	Asbestos Removal	Finishes & Fittings / Furniture & Equip.	General Conditions	Seismic Resistance Conditions	Heating, Ventilation & Air Conditioning Systems	Plumbing / Piping Systems	Electrical Power Service & Distribution	Lighting Systems	Data / Communications Networks
NE Quadrant														
NE-1	Permanent	2	3	1	3	2	3	2	3	3	3	3	3	3
NE-2	Permanent	2	3	1	1	1	3	2	3	3	3	4	2	planned
NE-3	Limited	2	3	3	4	3	3	3	2	4	3	3	3	3
NE-4	Permanent	2	3	1	1	1	3	2	3	3	3	4	2	planned
NE-6	Permanent	2	3	1	1	1	3	2	3	3	3	4	2	planned
NE-8	Permanent	2	3	4	3	3	3	3	4	3	3	3	3	planned
NE-10	Permanent	3	3	4	3	3	3	3	5	3	3	3	3	planned
NE-12	Permanent	2	3	4	3	3	3	3	5	3	3	3	3	planned
NE- 16	Permanent	2	3	2	3	3	3	2	3	3	3	4	2	planned
NE-18	Permanent	2	3	1	1	1	3	2	3	3	3	4	2	planned
NE-20	Permanent	2	3	1	1	1	3	2	3	3	3	4	2	planned
NE-21	Limited	4	3	5	5	5	3	3	5	4	3	4	3	2
NE-22	Limited	3	3	5	5	5	3	3	5	4	3	4	3	planned
NE-23	Limited	3	3	4	3	3	3	3	5	3	3	4	3	planned
NE-24	Limited	3	3	4	3	3	3	3	5	3	3	4	3	planned
NE-25	Permanent	3	2	3	2	2	2	2	3	3	3	3	3	3
NE-26	Limited	3	3	5	5	5	3	3	5	4	3	4	3	planned
NE-27	Permanent	3	3	5	5	5	3	3	4	4	3	4	3	planned
NE-28	Limited	3	3	4	3	3	3	3	5	3	3	4	3	planned
NE-30	Limited													
NW Quadrant														
NW-1	Permanent	2	2	1	2	3	2	3	5	3	3	3	3	2
NW-3	Permanent	2	3	4	3	3	3	3	5	3	3	4	3	planned
NW-5	Permanent	5	5	3	3	3	3	3	5	3	3	3	3	na
NW-6	Permanent	3	3	4	3	3	3	3	5	3	3	4	3	planned

Building	Planned Building Life Category	Architectural						Structural		Mechanical	Electrical			
		Functional Alignment	Accessibility / Safety	Bldg. Envelope: Roof	Bldg. Envelope: Walls	Asbestos Removal	Finishes & Fittings / Furniture & Equip.	General Conditions	Seismic Resistance Conditions	Heating, Ventilation & Air Conditioning Systems	Plumbing / Piping Systems	Electrical Power Service & Distribution	Lighting Systems	Data / Communications Networks
SE Quadrant														
SE-1	Permanent	2	3	4	3	2	3	3	4	3	3	3	3	planned
SE-2	Permanent	3	2	1	1	2	2	2	1	2	2	2	2	1
SE-4	Limited	5	3	5	3	3	4	3	5	4	3	3	3	3
SE-6	Permanent	2	1	2	1	1	2	2	1	2	2	2	2	1
SE-6.1	Temporary	5	5	5	4	3	3	3	3	3	3	3	3	na
SE-6.2	Temporary	5	5	5	4	3	4	4	3	4	3	3	4	na
SE-8	Permanent	4	3	1	3	5	3	3	4	3	3	3	3	3
SE-9	Limited	3	3	3	3	3	3	3	3	3	4	3	3	na
SE-10	Permanent	2	3	2	4	4	3	3	2	3	3	3	3	planned
SE-12	Permanent	4	3	5	4	3	3	3	5	3	3	4	3	5
SE-14	Permanent	2	3	1	5	5	3	3	5	3	3	5	3	2
SE-16	Permanent	5	3	2	3	3	3	3	3	3	3	3	3	3
SW Quadrant														
SW-1	Permanent	3	3	1	3	4	3	3	4	3	3	3	3	2
SW-2	Permanent	3	2	1	1	1	2	2	1	2	2	2	2	1
SW-3	Permanent	3	3	2	3	4	3	3	5	3	3	3	3	2
SW-5	Permanent	2	3	1	3	3	3	3	5	3	3	3	3	planned
SW-7	Limited	3	3	3	3	2	3	3	2	3	3	3	3	na
SW-8.1/8.3	Temporary													
SW-9	Permanent	3	3	2	3	3	3	3	5	3	3	3	3	3
SW-10/16	Permanent	2	3	5	4	3	3	3	3	3	3	3	3	planned

Infrastructure Condition Overview

November 1997

Condition 1: Excellent	1	conforms to current standards
Condition 2: Good	2	no significant deficiencies
Condition 3: Average	3	
Condition 4: Deficient	4	upgrade req. within 10 years
Condition 5: Critical	5	upgrade req. within 5 years

	Architectural			Civil			Mech.			Electrical		
Quadrant	Soft Landscape	Paved Vehicle Surfaces	Pedestrian Surface/Accessibility Provisions	Canopy System	Campus Signage	Water Service	Sanitary Service	Storm & Surface Drainage	Central Heating System	Electrical Service	Campus Lighting	Campus Communication Fibre Backbone
NE Quadrant												
General	4	3	4	4	4	2	2	2	3	4	2	3
Project	5	5	5	4	4	3	3	3	3	5	3	3
NW Quadrant												
General	5	3	3	4	4	2	2	2	2	4	3	3
Project	5	5	5	4	4	5	3	3	3	6	3	3
SE Quadrant												
General	4	4	3	3	4	2	2	2	2	3	3	3
Project	4	4	4	4	4	4	4	4	3	5	5	5
SW Quadrant												
General	3	4	3	3	2	2	2	2	2	2	3	3
Project	3	4	4	4	3	5	3	4	3	3	5	3

Notes:

- 'General' refers to the average or overall condition of the systems in the quadrant;
- 'Project' refers to the need or objective to undertake specific upgrade projects in the quadrant which may or may not affect the general condition assessment;
- The designation '3: Average' has been used to denote the conditions where the requirement for upgrading is not immediate but reflects the fact that given that many systems are in the order of 30 years old upgrade projects will need to be considered periodically and most new development projects will also trigger infrastructure upgrade requirements.

Appendix C: Parking Requirements Analysis

The table below provides a summary of BCIT' existing parking supply and a preliminary estimate of future requirements. The existing capacities are based on the Infrastructure Review Report (Reid Crowther, 1993), modified by a visual survey of new parking areas. Some parking areas are not lined so that the capacity is approximate.

Future requirements estimates are based on three assumptions:

- On-campus FTE enrollment increases from its current level to 12,000 at the planned campus capacity;
- Future requirements will be at 85% of the level that would otherwise result from a prorated increase based on current supply and FTE growth; this assumes greater use of transit;
- Parking on Willingdon is removed during the planning period and requires replacement on-campus.

Based on this analysis BCIT currently has a supply of approximately 4086 spaces. At the time on-campus enrollment reaches 12,000 FTE an additional 1,500 spaces will be required on the BCIT campus.

Parking Analysis						
October 1 1997						
	Current Capacity	Quadrant:				Master Plan Category
		NE	NW	SE	SW	
Perimeter Lots:						
A	232	232				Perimeter Parking - Dev. Site
B	230			230		Perimeter Parking - Dev. Site
P7	391			391		Perimeter Parking - Dev. Site
C	262			262		Perimeter Parking - Dev. Site
P8	44			44		Perimeter Parking
D	244			244		Perimeter Parking
F	206			206		Perimeter Parking
H	65			65		Perimeter Parking
J	29				29	Perimeter Parking
K	46			46		Perimeter Parking
L	270			270		Perimeter Parking
M	68				68	Perimeter Parking
N	181				181	Perimeter Parking
O	125				125	Perimeter Parking
P21	60	60				Perimeter Parking
NW Corner	0			0		Perimeter Parking - Dev. Site
Subtotals	2453	292	0	1883	278	
Residence Lots:						
P11	41				41	Residence
P13	41				41	Residence
P15	41				41	Residence
Subtotals	123	0	0	0	123	
Roadway Parking:						
Seg. 1	20				20	Edge Road
Seg. 2	0					Edge Road
Seg. 3	352				352	Edge Road
Seg. 4	94	94				Edge Road
Seg. 5	0					Edge Road
Seg. 9	27				27	Edge Road
Seg. 14	250				250	Edge Road
Seg. 15	18				18	Edge Road
Subtotals	761	94	0	297	370	
Core Area Lots:						
NE Corner	0			0		Core Area
P23	18	18				Core Area
P22	12	12				Core Area
P21	60	60				Core Area
P20	89	89				Core Area
P19	103	83	20			Core Area
P17	5	5				Core Area
R-2000	11			11		Core Area
P16	28			28		Core Area
SE4 - Minor	2				2	Core Area
P5 P	88				88	Core Area
P12	46				46	Core Area
SE14 - Pay	31				31	Core Area
SE16 - Minor	6				6	Core Area
Lot 1	25				25	Core Area
P9	38				38	Core Area
Subtotals	499	267	59	173	0	
Willingdon Parking:						
East Side	126			30	96	
West Side	124			18	106	
Subtotals	250	0	48	0	202	
Campus Totals	4086	653	107	2353	973	
Future Requirements						
Total Requirement:						
- ProRata Increase	6129					
- Reduced @ 85%	5210					
Loss	375					
Additional	1498					