SHAPING OUR FUTURE
A Guide to the Planning, Design, and Architecture of the Natural & Built Environments
April 2007
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FOREWORD

Mackenzie Chown Complex, Pond Inlet Courtyard
Architect: Raymond Moriyama Architect
Year built: 1972
Located atop the beautiful Niagara Escarpment, Brock University has focused on restoring its unique natural environment and on its traditional emphasis of putting ‘Students First’. This wonderful attitude towards student/faculty relationship and close connection between learning and the natural environment have led to planning principles of: compactness; respect for nature; an intimate, interconnected pedestrian network - interior and exterior; planned and accidental meeting places for students, faculty, staff and administration in safe and friendly surroundings.

Like other universities, Brock has experienced growth and evolution. It is currently establishing what makes it so unique: knitting tradition and a sense of community, it is evolving into a comprehensive University with graduate and post-graduate academic institutions with advanced research capabilities and international outlook.

The University has been making great strides in physical planning as well by developing key documents with a focus on campus planning, architectural design, improving the movement and circulation system and natural surroundings. In the last several years, Brock has developed a master plan with involvement of the whole Brock Community and the consultants, Urban Strategies Inc., to enhance its fit with future academic plans and natural surroundings. The University is aiming to develop a formal understanding and direction with regard to not only building sustainability, but also to urban sustainability practices. A Sustainable approach is now applied to individual architectural design as well as incorporated into everyday practices on a campus wide scale.

While building on its past, this document helps cement and direct the future legacy of Brock University and set out the direction for planning, design and sustainability for the University as it looks to the future.

Please read on and enjoy.

Dr. Raymond Moriyama, OC, O Ont, OAA, FRAIC, Hon FAIA
Chancellor, Brock University
March 2001 - March 2007
INTRODUCTION

Brock University is located in the beautiful Niagara Peninsula. The University’s Main Campus is located on top of the Niagara Escarpment in St. Catharines, Ontario. It has a presence in the city’s downtown and a campus in Hamilton. Brock is the only Canadian university with the unique distinction of being located within a UNESCO Biosphere Reserve.

The University is expanding and evolving as an institution with national and international recognition and it is committed to offering high-quality education in a setting characterized by a strong sense of community. Brock is dedicated to demonstrating innovation and leadership in sustainable practices and has a desire to function in harmony with the natural environment. The University is also dedicated to fostering its role as the ‘hub’ of the Niagara region as well as providing world class research, arts and athletic facilities that build upon the distinct regional character and contribute to a high quality of life for Niagara Peninsula residents.

The purpose of this guiding document is to set out a strategic approach to campus planning, urban design and architecture. The framework for the strategic approach is defined by four themes, and further developed by eight goals and corresponding directions. As the University expands, it is committed to developing a positive environment on campus through exemplary design. This document provides a guide and checklist for the evaluation of new developments and initiatives.
The strategic approach outlined in this guiding document is informed by and builds on the foundations, principles and recommendations from the following University documents: the Campus Master Plan, Facility Needs and Priorities Study, Utilities Master Plan, and Best Building Practices. These documents should be read in combination with this guide.

The following diagram illustrates the relationship between this guide and the four existing documents:
Aspiring to a position of distinctive national and international leadership, Brock is transforming its culture and academic programming by building a full array of graduate programs to the Ph.D. Level on the foundation of rigorous programs of undergraduate study and by cultivating a robust research and innovation culture on the part of its faculty. Brock is committed to sustaining a student experience of unsurpassed quality, to a strong and supportive learning environment, to vigorous and occupationally relevant experiential learning opportunities. The University’s commitment to the Niagara Region is long-established and remains a cardinal value of Brock’s identity and mission. All these commitments attest to Brock’s recognition that it is the function of the University to contribute directly to building a civil society here in Canada and in the world around us.
Brock University flourishes through the scholarly, creative, and professional achievements of its students, faculty and staff. Offering a range of undergraduate and graduate programs, Brock fosters teaching and research of the highest quality. As a diverse and inclusive community, we contribute positively to Canada and beyond through our imagination, innovation and commitment.
To achieve the University’s vision and academic goals, the following themes will set the desired direction for campus planning, urban design and architecture, and guide the evaluation of new initiatives and proposed developments on campus.

The four guiding themes are the following:

- CAMPUS EXPERIENCE
- COMMUNITY
- ENVIRONMENT, HEALTH AND SUSTAINABILITY
- INNOVATION
CAMPUS EXPERIENCE

Walker Complex
Architect: Moriyama & Teshima Architects
Year built: 2002
Brock’s campus is experiencing significant change as the main campus grows and the University expands its facilities and boundaries. As the University evolves, it will continue to engage students, staff and faculty to cultivate a diverse and inclusive University community that is attractive and welcoming. On all of its campuses and facilities, the University will aspire to provide a compact, healthy, beautiful, safe and accessible environment. It will offer a full range of facilities necessary to fulfill Brock University’s evolving academic mission and foster student and faculty learning.
COMMUNITY

View of St. Catharines
from the Arthur Schmon Tower
Year: 2007
The University is committed to reaching out to and engaging the greater community to develop a sense of connection and help support the social fabric of the Niagara Region and all sectors of the Niagara Region community.

The University is also committed to strengthening existing partnerships and creating new regional opportunities for social, artistic, recreational and economic development.
ENVIRONMENT
HEALTH AND
SUSTAINABILITY

Walker Complex Courtyard
Architect: Moriyama & Teshima Architects
Year built: 2002
The University will continue to act as a model steward of its unique natural setting in the UNESCO Biosphere reserve by integrating environmental planning principles as the campus evolves, and implementing sustainable practices in the operations, maintenance and development of its buildings and campus at large.

Healthy building principles are considered fundamental. They will be an integral component in new building design and comprehensively monitored in existing spaces and ongoing operations.
INNOVATION

Plaza 2006
Architect: MacKay-Lyons Sweetapple Architects and Rounthwaite Dick & Hadley Architects
Year built: 2007
The University will continually aspire to cultivate a strong and supportive learning environment with facilities that embrace innovative technology, research opportunities and student-based learning. Versatile and adaptable spaces, infrastructure and operations with long term viability and quality are deemed integral to accommodating the growing and changing needs of the University.

As an active leader, the University will promote and seek to integrate innovative approaches on all of its sites and in the Region.
The following goals, their intent and directions further develop the framework for the physical evolution of Brock’s campuses as set out in the four guiding themes. These directions should guide the development and design of new facilities, the renewal and improvement of existing facilities, and the everyday operation of facilities.

- PROJECT DEFINITION AND DESIGN
- URBAN DESIGN AND ARCHITECTURE
- OPEN SPACE AND PUBLIC REALM
- MOVEMENT AND CONNECTIONS
- COMMUNITY
- PUBLIC ARTS AND CULTURE
- ENVIRONMENT AND SUSTAINABILITY
- OPERATIONS AND INFRASTRUCTURE
A project’s expectations and goals need to be clearly communicated and understood between all involved parties in the beginning stages of the project. Clear definition of the image, scale, context and significance of each project should be articulated at the outset. A clear definition will help dictate how a project is developed and assessed with respect to the remaining goals.

The following directions embrace the intent of this goal:

5.1.1 From the early stages of project development, engage in consultation with all interested and affected parties to determine the objectives and characteristics for the proposed project;

5.1.2 Ensure that the project meets the academic mission of the University;

5.1.3 Clearly define the scale and the nature of the proposed project, whether the building will be a landmark building, a background building or a modest building;

5.1.4 Assess the appropriateness of the proposed use, location, size, and relationship to campus structure; and

5.1.5 Ensure that the project budget and resources are set appropriately in order to meet the project objectives and recurring annual operating expenses.
Walker Complex
Architect: Moriyama & Teshima Architects
Year built: 2002
Buildings should be designed to the highest architectural standards within the allocated resources in order to create an inviting, balanced and coherent character. Versatility, adaptability and quality should be instilled in Brock’s new facilities as the University campuses evolve. Creativity and imagination will be integral to the design of these facilities. Universal design and safety principles will be fundamental and transcend all projects to support an integrated design approach at the University. Individual spaces and buildings will be marked with distinct identities to ease way-finding through the campus. Public space for study, gathering and meeting will be incorporated into all projects to provide space for non-structured activities.

The following directions embrace the intent of this goal:

5.2.1 Pursue the development of a highly compact campus;
5.2.2 Ensure urban design and architectural excellence in all new developments;
5.2.3 Pursue contemporary design that is harmonious and respectful of existing buildings;
5.2.4 Develop buildings that respond to the context of the site;
5.2.5 Promote building design that enhances the connection between the natural and built environments;
5.2.6 Encourage the interplay between the inside and outside of buildings to enhance facility users’ contact with the natural surroundings and encourage the use of natural light;

5.2.7 Design building spaces that are functional and flexible with the opportunity for expansion and revision as the university grows and changes;

5.2.8 Ensure that instructional and non-office space are designed to support formal and informal learning;

5.2.9 Pursue the integration of innovative building technology;

5.2.10 Promote the use of building materials that minimize health risks;

5.2.11 Encourage the creation of landmark buildings in key and appropriate locations;

5.2.12 Encourage the creation of new open spaces by placing new buildings appropriately;

5.2.13 Consider Value Engineering and Life Cycle analysis for new facilities;

5.2.14 Integrate universal design to ensure that all buildings are accessible to all people including those with disabilities; and

5.2.15 Integrate the principles of Crime Prevention through Environmental Design (CPTED).
South Block
Architect: Moriyama & Teshima Architects
Year built: 2002
Brock University’s landscape on the Niagara Escarpment is one of its hallmarks. The University will create attractive, usable and inviting public space throughout the University. The close relationship and interaction between University users and the surrounding environment will be respected and encouraged. Recreational use of open spaces throughout the campuses will be considered and integrated with natural spaces.

Open spaces, such as courtyards, will be integrated into the built fabric to offer diverse opportunities for learning, recreation, and gathering to promote a positive experience of the University.

The following directions embrace the intent of this goal:

5.3.1 Build upon regional identity and further raise the profile of Brock University through programming and activities related to the Niagara Escarpment’s status as a UNESCO World Biosphere Reserve;

5.3.2 Promote re-naturalization of areas where appropriate;

5.3.3 Promote and integrate recreational uses where appropriate;

5.3.4 When designing new facilities, consider the creation of open spaces and courtyards with unique identity that encourage gathering; and

5.3.5 Promote connections between exterior and interior space on campus.
MOVEMENT AND CONNECTIONS

Continue to create a balanced network of movement systems, including pedestrian, cycling and vehicular mobility, as well as amenity space that is inviting and supportive of the student populace, faculty, staff and visitors. A unique component of this network is the University’s extensive interior corridor system, which provides fluid movement and common space throughout the main campus.

The following directions embrace the intent of this goal:

5.4.1 Continue to pursue a system of safe and multifunctional campus streets and gateways;

5.4.2 Promote public space or ‘gathering places’ within the interior pedestrian pathway system to enhance the common space experience on the main campus;

5.4.3 Continue to develop continuous exterior pedestrian routes connected to the existing pathways and trails on campus, in particular connections to the Bruce Trail, and to the surrounding community;

5.4.4 Promote continuous bicycle pathways that link to existing bicycle trails and to the surrounding community;

5.4.5 Continue to develop a balanced movement network on campus to minimize vehicular movement;

5.4.6 Encourage way-finding by clear articulation and signage of places, buildings, and corridors; and

5.4.7 Promote initiatives by the Regional Municipality of Niagara to support transit and other alternative modes of transportation.
Thistle Complex
Architect: Gordon S. Adamson and Associates
Year built: 1968
Rodman Hall in Downtown St. Catharines
Architect: Thomas Rodman Merritt/ Salter & Flemming Architects / Macdonald Zuberec Architects
Year built: 1856/1960/1974
Brock University will continue to act as an active agent and driving force in the economic and cultural development of the Niagara Region. The University will engage the community to further develop a sense of connection to the social fabric of the region.

The following directions embrace the intent of this goal:

5.5.1 Maintain an open and on-going dialogue with the region, neighbouring municipalities, community organizations and businesses about the evolution of the campus and University programs on and off campus;

5.5.2 Encourage involving Niagara enterprises in campus planning, facility design and architecture projects of Brock University;

5.5.3 Promote partnerships to retain student talent in the region by fostering their involvement in the community and its enterprises; and

5.5.4 Participate in the economic revitalization of areas where the University has a direct presence such as downtown St. Catharines.
PUBLIC ARTS AND CULTURE

Brock University will continue to value, support and integrate public art throughout its campuses. Public art gives identity, animates places and can be used as a tool for way-finding, commemoration and celebration. The University will foster local talent and act as an active agent by commissioning the arts in the greater community.

The following directions embrace the intent of this goal:

5.6.1 The University will endeavour to allocate up to 1% of a project budget to art to enhance the public realm with art pieces which define the identity of specific spaces and buildings;

5.6.2 Promote the integration of art in the design of public and open spaces such as courtyards, outdoor space and interior corridors;

5.6.3 Ensure that the siting of an art installation is appropriate by integrating the arts in strategic locations on campus, making the pieces accessible to the public, and enhancing views to allow the desired use of space;

5.6.4 Provide a wide range of public art on campus by promoting various artists and encouraging diverse medium, scale and level of interaction; and

5.6.5 Encourage the exhibition of the student arts community’s work on campus and in the greater community.
Integrated public art in the central courtyard

Foreground artwork: Path of Possibilities, Ilan Averbuch (1988)
Background artwork: She Wolf, Ilan Averbuch (1991)
ENVIRONMENT AND SUSTAINABILITY

Brock University will strive to promote sustainable practices and act as a good steward of its unique natural environment. The focus will include sustainable building design, sound environmental planning practices for new buildings, and appropriate everyday operations at the campus level.

The following directions embrace the intent of this goal:

5.7.1 Promote green building technology and green building rating systems such as LEED certification;
5.7.2 Encourage Low Impact Development strategies to accommodate storm water run-off in an environmentally sensitive manner;
5.7.3 Encourage energy efficiency programs to reduce fossil fuel use by promoting programs such as the Royal Architecture Institute of Canada’s Carbon Neutral Challenge for 2030;
5.7.4 Promote the stewardship and protection of the Niagara Escarpment, Greenbelt and Bruce Trail;
5.7.5 Promote waste reduction and recycling programs on campus;
5.7.6 Encourage partners on campus to use sustainable practices;
5.7.7 Encourage environmental education in academic programs to increase awareness of environmental issues;
5.7.8 Plan and design the built environment to achieve the requirements of the provincial Energy Conservation Leadership Act; and
5.7.9 Promote an integrated design approach by including a multi-disciplinary team of professionals for new projects.
As the University continues to grow, it needs to understand the existing conditions and capacity of its infrastructure. This understanding will allow Brock to efficiently develop new projects as well as plan ahead for future needs. The University, as it moves forward, will endeavour to embrace a sustainable approach to the operation and development of its infrastructure.

The following directions embrace the intent of this goal:

5.8.1 Monitor infrastructure capacity and campus growth to meet the future needs of the campus;
5.8.2 Plan and evaluate proposed projects to ensure they can be supported by existing infrastructure;
5.8.3 Minimize the ongoing use of non-renewable resources in future infrastructure projects;
5.8.4 Monitor new building systems and central campus systems to ensure that they perform to their designed standard;
5.8.5 Promote best practices and innovative technologies that improve the efficiency of campus infrastructure and operations; and
5.8.6 Encourage and provide the resources necessary for the ‘Continuous Commissioning’ of infrastructure in order to achieve operational savings.
Mackenzie Chown Complex H Block
Architect: Moriyama & Teshima Architects
Year built: 1982
Arnie Lowenberger Residence
Architect: Teeple Architects
Year built: 2003
IMPLEMENTATION 6.0

The themes and goals set out in this document provide guidance for campus development and should be implemented for all new initiatives and projects on Brock University campuses. All relevant University documents should be referenced in combination with this document, as well as any future plans:

The ‘Campus Master Plan’ sets out the foundations and principles to direct the physical growth of the main campus. The proposed project should be reviewed to verify if it complies with the principles, policies and figures of the Plan.

The ‘Facility Needs and Priorities Study’ defines the facility needs of the University, provides guidelines for the design and planning of the facilities at Brock and puts forward an overall development strategy for the main campus.

The ‘Utilities Master Plan’ assesses the current utilities infrastructure and evaluates strategies for the university to meet its growth challenges.

The ‘Best Building Practices’ document outlines the responsibilities and procedures, including the procurement process, which should be considered for all proposed projects on campus.
As Brock University expands and transforms, the challenges, lessons learned and accomplishments of this growth process will be shared with other post-secondary institutions and the greater public. As an academic institution, Brock has the responsibility to promote and be an active leader in innovative planning and design. Sharing of information will help to promote the University as an institution with national and international prominence and recognition.

Recognition should be given to those groups and individuals who work with Brock University towards achieving the vision ingrained in the themes and goals of this guiding document.
Monitoring of the evolution of Brock’s campuses should be encouraged to ascertain if this document and existing policies require revision. The monitoring should be carried out periodically and this document should be revised as necessary.
The following checklist will assist in the evaluation of new initiatives. While the checklist is not meant to be a substitute for due diligence in design, project evaluation should reflect the degree to which the project supports the intent of the themes and goals of the strategic approach outlined in this document. This checklist can be used in combination with criteria and checklists provided in the documents described in Section 6.0 under Implementation.

“Exceeds” refers to an initiative that meets and exceeds the themes and goals;

“Supports” refers to an initiative that meets the intent of the themes and goals;

“Partially supports” is appropriate when the initiative meets several but not all of the themes and goals; and

“Undermines” refers to an initiative that does not support any of the themes and goals and may in some aspects contradict them.

In the event a project is evaluated in the latter two categories, the evaluator should make recommendations to improve the project so that it meets or exceeds the themes and goals of this document.
Guiding Themes

Campus Experience

Community

Environment, Health and Sustainability

Innovation

Comments:

Undermines
Supports
Partially Supports
Exceeds
Planning, Urban Design, and Architecture
Goals and Directions

5.1 Project definition and design

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<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Does the project have clear objectives?</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Will the project advance Brock’s academic goals?</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Are the image and scale of the project appropriate?</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Are the location and context of the project appropriate to enhance the image and experience of the campus?</td>
<td>O</td>
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<tr>
<td>Is the budget appropriate to meet the project objectives?</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Does the project meet the efficiency and flexibility goals of the campus?</td>
<td>O</td>
<td>O</td>
</tr>
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Comments:

5.2 Urban design and architecture

- Exceeds — Supports — Partially Supports — Undermines

Comments:

5.3 Open space and public realm

- Exceeds — Supports — Partially Supports — Undermines

Comments:
5.4 Movement and connections

Undermines Supports Partially Supports → Undermines

Comments:

5.5 Community

Undermines Supports Partially Supports → Undermines

Comments:

5.6 Public arts and culture

Undermines Supports Partially Supports → Undermines

Comments:

5.7 Environment and sustainability

Undermines Supports Partially Supports → Undermines

Comments:

5.8 Operations and infrastructure

Undermines Supports Partially Supports → Undermines

Comments:
Overall Project Evaluation

Overall Evaluation

- □ Excellent
- □ Very Good
- □ Good
- □ Satisfactory
- □ Needs to Improve
- □ Unsatisfactory

Comments & Recommendations

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References

Brock: Building a Civil Society and Vision Statement

Brock University Campus Master Plan (February 2003) prepared by Urban Strategies Inc. and Marshall Macklin Monaghan

Brock University Best Building Practices (November 2004)


Brock University Accessibility Audit and Design Standards Project (April 28, 2006) prepared by The Herrington Group Limited

Brock University Facility Needs and Priorities Study (September 2006) prepared by Urban Strategies Inc. and Education Consulting Services Corporation

Brock University Briefing Report: Brock’s Past, Present and Future (2007)

Brock University Utilities Master Plan (April, 2007) prepared by AMEC Consultants
Arthur Schmon Tower
Architect: Gordon S. Adamson & Associates
Year built: 1968