

UBC REPORTS

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March 21, 1996

Budget spells changes for universities

by Stephen Forgacs

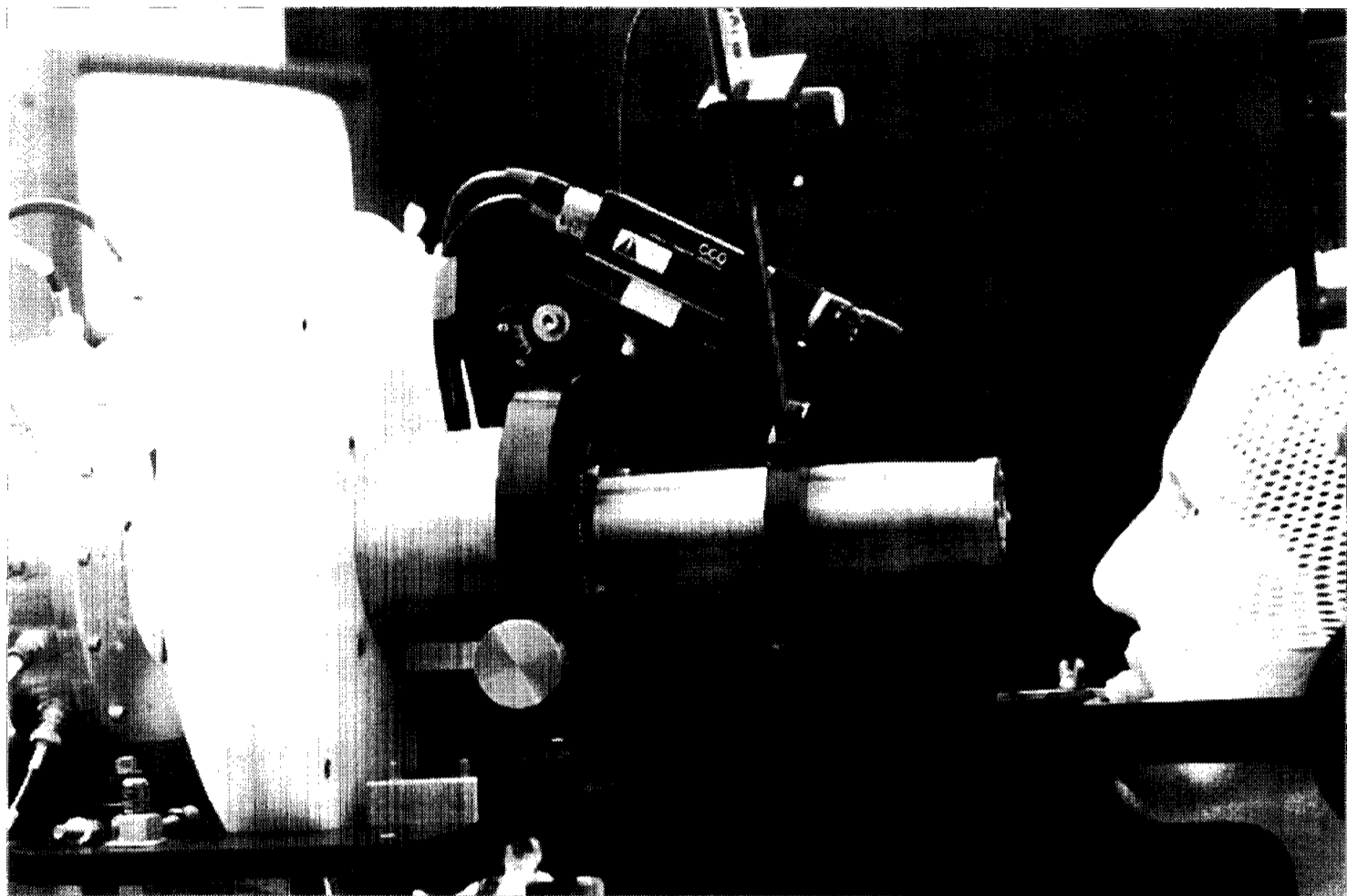
Staff writer

The March 6 federal budget held good news and bad news for the country's universities.

Further cuts to several major sources of research funding to be implemented in 1998/99 mean university researchers will be forced to struggle harder to gain funding. The creation of a new health services research fund, however, will allow Canadian universities to benefit society through funding of health services research projects in a variety of areas, including the social sciences.

As part of the health services research initiative, the government will commit \$65 million over the next five years to fund research on what works, and what doesn't, in Canada's health care system.

"The health research fund is new money that will definitely provide new and exciting opportunities for people in many disciplines," said Bernard Bressler, UBC vice-president, Research. "The opportunities will appear in a range of areas including the social sciences, nurs-

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TRIUMF photo

UBC's TRIUMF cyclotron is the location of Canada's only proton therapy facility used to treat eye melanoma. Patients' heads are immobilized with a mesh mask and bite-block while a fast-moving beam of subatomic particles (protons) are directed at the tumour in 90-second doses.

World-class physicist receives Killam Prize

Physicist William Unruh celebrates his 20th anniversary at UBC this year with one of Canada's most distinguished academic awards—the Killam Prize for the Natural Sciences.

Three \$50,000 Killam prizes are presented annually by the Canada Council in recognition of world-class achievements by Canadians in the natural sciences, health sciences, and engineering.

Unruh, 50, is recognized for research on gravity and theoretical cosmology—the study of the origin and evolution of the universe.

Unruh joined UBC's Physics Dept. in 1976. A decade later he became director of the Cosmology Program at the Canadian Institute for Advanced Research (CIAR). The private, non-profit organization has created a series of Canadian-based international research networks to foster creative approaches to the study of complex problems.

Unruh's expertise lies in the combined effects of gravity and quantum mechanics—the theoretical science which looks at the behaviour of all matter. The combination is important both for understanding the first moments of the universe and in developing a complete theory of matter and gravity.

Unruh is noted for pioneering work on quantum field theory as it applies to black holes. These holes are pockets of space believed to be created when stars collapse in on themselves leaving behind a gravitational field from which no

light can escape.

Unruh's discovery of acceleration radiation is of particular significance. He found that by accelerating an object in a vacuum (now known as the Unruh vacuum) where no matter or radiation is thought to exist, the object heats up and acts as though it were surrounded by radiation. The object's temperature (the Unruh temperature), rises in proportion to acceleration.

The formula for acceleration radiation, together with Stephen Hawking's discovery that black holes are hot, revealed unsuspected connections between quantum theory, gravity and thermodynamics.

"So it turns out that our notion of a particle is a relative concept which depends on your state of motion," said Unruh. "If you accelerate, you can see particles which you wouldn't see if you were sitting still."

John Wheeler, Unruh's mentor from Princeton University and the man who gave black holes their name, called Unruh's formula one of the most important discoveries in fundamental physics in the last 20 years.

More recently, Unruh has been investigating the idea of quantum computers that are theoretically capable of factoring huge numbers hundreds of digits long. Among the practical applications of such computers, were they to exist, is their ability to encrypt messages within massive digits.

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Unruh

TRIUMF takes steady shot at eye cancer

by Charles Ker

Staff writer

When UBC Prof. Alan Hannam was informed last year his malignant tumour in his left eye had the potential to metastasize, "when am I going to lose it?"

Surgical removal of the eye was the standard treatment for eye melanoma for many years. Today, precision proton beam therapy is the treatment of choice for some tumours.

Hannam was treated at Harvard University in Boston, one of three U.S. sites offering the therapy. The Harvard cyclotron has helped about 1,500 melanoma patients with its proton beams over the last 20 years.

Six months ago, UBC became the only Canadian site to offer the painless therapy for those with malignant eye melanoma. Located on campus at the TRIUMF particle accelerator, the proton therapy facil-

ity has treated 13 patients since it opened in August 1995.

The procedure involves diverting a small fraction of the TRIUMF cyclotron's proton beam into a small, specially designed chamber. There, the beam passes through a nozzle at the end of which is a metal aperture sculpted to the exact dimensions of the patient's tumour. For approximately 90 seconds, the tumour is uniformly bombarded by protons at a rate of 100 million per second.

This brief proton blast, repeated four times over four consecutive days, is capable of destroying the tumour with millimetre precision.

"Like little cannonballs, the protons destroy damaged cells and break bonds in the DNA as they slow down in the eye," said Ewart Blackmore, head of TRIUMF's accelerator technology division which designed the beam delivery system. "We can

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UBC honours the many campus authors who made their mark in 1995

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Richard Prince's sculptures flow through the Institute of Asian Research

Letters

Discrimination definition lacks fairness

Editor:

With probably the best of intentions, Dr. Sharon Kahn, associate vice-president, Equity, suggests that the Policy on Discrimination and Harassment be amended to include a definition of "systemic discrimination" (*UBC Reports*, March 7, 1996). Unfortunately, however, Dr. Kahn's proposed definition depreciates the very notion of fairness without which any policy on discrimination and harassment has merely political, but not moral, significance.

The suggested definition is as follows: "Systemic discrimination refers to policies and practices that may appear fair and impartial, but contain barriers that detrimentally affect the work or study environment or lead to adverse job- or study-related consequences for members of groups protected by the B.C. Human Rights Act."

The definition is insidious, first, because the restrictive clause modifying the presumed bad policies and practices—i.e., those "that may appear fair and impartial"—implies that apparent fairness and impartiality are somehow integral parts of the discrimination which the policy sets out to oppose. This is to give fairness and impartiality, the very things I would hope Dr. Kahn aims to promote, a bad name. It perversely leaves unopposed those policies and practices which lack the appearance of fairness and impartiality!

Secondly, it should be clearer in the revision whether the auxiliary "may" governs only "appear," or both "appear" and "contain." This seemingly picky grammatical query is crucial. For the worry which

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UBC Reports welcomes letters to the editor on topics relevant to the university community. Letters must be signed and include an address and phone number for verification. Please limit letters, which may be edited for length, style and clarity, to 300 words. Deadline is 10 days before publication date. Submit letters in person or by mail to the UBC Public Affairs Office, 310 - 6251 Cecil Green Park Road, Vancouver B.C., V6T 1Z1, by fax to 822-2684 or by e-mail to paula.martin@ubc.ca.

many have about Dr. Kahn's policy is that, whereas the appearance of fairness is not enough to establish one's innocence, the mere appearance of disadvantaging some legislatively defined "group" is enough to establish one's guilt. Call me naive, but I think the policy should concern itself with bad policies and practices that *do*, not only *may*, perpetrate unfairness, etc.

Thirdly, the revision should avoid the "mushy causality" of the phrase "lead to" (as in "lead to adverse ... consequences"). All roads may lead to Rome; but if a person ends up in Rome, more than the roads may be to blame. All sorts of policies in place at UBC—from grading students to hiring and promoting faculty—involve justifiable discriminations that may nevertheless "lead to adverse ... consequences." Ask any student who fails a course or any faculty member denied tenure. But the issue is not whether the consequences are

adverse or whether the person suffering those consequences belongs to some provincially sanctified group. The issue is, and ought only to be, whether the judgements and policies are fair and impartial.

So again I urge Dr. Kahn and her equity cohorts to come clean: If your policies are about justice and moral principle, then let words like "fairness" and "impartiality" have pride of place in your document. Don't sneer at them. And don't be afraid of categories such as "human beings." Above all, don't try to invent a brave new body of morality constructed upon the hollow bones of "detrimental effects," "adverse consequences," and "protected groups."

Alternatively, if your policy is not about justice, fairness, and impartiality, then please be more open about the amorally political nature of its goals and motivation.

Dennis Danielson
Professor of English

East Mall endangers pedestrians

Editor:

The decision to open East Mall to unrestricted vehicle traffic was protested by many people last year, but it has remained in effect. Over the months the situation for pedestrians in the area has worsened markedly. The volume of vehicle traffic has increased considerably, as more and more drivers find the East Mall a convenient short cut or drop-off point.

Crossing the road, especially in rainy weather, has become increasingly hazardous: despite prominent warning signs, some cars are driven aggressively and at high speeds, sometimes weaving to

and fro across the road to avoid the speed bumps. Other cars move into areas where traffic is supposedly completely forbidden, in front of the Student Union Building or between the Main Library and Buchanan Tower.

The university should ensure a safe environment for the large numbers of pedestrians who have to cross this road frequently to reach the Student Union Building, the Aquatic Centre, the residences and parking facilities, by banning, or severely and effectively restricting the growing vehicle traffic along it.

Graham Good
Professor of English

Unruh

Continued from Page 1

Unruh says investigations into quantum computers help sharpen his understanding of what makes modern quantum mechanics different from more classical thoughts about the world such as those from Sir Isaac Newton's time.

"We know there are strange things in quantum mechanics and the thought of a computer which can solve problems that are hopeless to solve with ordinary computers is really strange," Unruh said. "What is it about quantum mechanics that allows us to do that?"

Born in Manitoba, Unruh received a BSc from the University of Manitoba and then went to Princeton, earning his master's and doctorate in the same department where Albert Einstein once worked.

This year's Killam Prize is the latest in a long list of honours that Unruh, a fellow of the Royal Society of Canada, has received over the years. His other awards include: an Alfred P. Sloan Research Fellowship (1978-80); the Rutherford Medal from the Royal Society of Canada (1982); the Herzberg Medal of the Canadian Association of Physicists (1983); the Steacie Medal (1984); the Rutherford Lectureship of the Royal Society of London (1985); a UBC Killam Research Prize (1990); the B.C. Science and Engineering Gold Medal (1990); and Medal of Achievement from the Canadian Association of Physics in 1995.

Unruh will be presented with his Killam Prize at a special dinner in Ottawa on April 16.

Edwin Jackson

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 Dr. Kurt Preinsperg, Philosophy, Langara College
 Prof. Emerita Margaret Prang, History
 Prof. Paul G. Stanwood, English

Details and application forms: M.C. Harrison, 1509-1450 Chestnut St., Vancouver, B.C. V6J 3K3

The committee reserves the right to withhold the prize if no appropriate essay is received, or to divide it if it proves impossible to judge between excellent essays.

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Stock market predicts upcoming B.C. election

by Stephen Forgacs

Staff writer

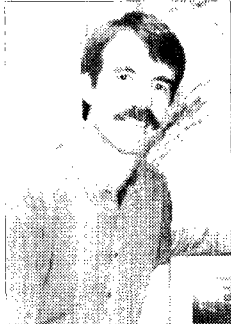
The UBC Election Stock Market (ESM) is coming to life again following the recent New Democratic Party leadership convention and the controversy surrounding B.C. Hydro and Premier Glen Clark.

"Trading activity on the markets has picked up markedly in the last few weeks as the NDP leadership race and the possibility of a spring election seem to have raised interest levels," said Assoc. Prof. Tom Ross of the Faculty of Commerce and Business Administration.

The exchange involves three markets in each of which a number of contracts are traded. The first is the Seats Market in which six contracts are traded, one representing each of the major parties and one contract covering all others.

The Popular Vote Market also trades six contracts, while the Majority Government Market trades three—a Liberal majority, an NDP majority, or neither.

"Prices in the Seats Market for NDP shares rose as high as 40 cents during the leadership convention, only to fall back to 33.3 cents the next week, perhaps in part due to the B.C. Hydro affair."



Ross

Ross said.

"Each party's share price translates into a prediction about the share of seats it will win in the Legislative Assembly. For example, the market currently expects the Liberals to win 39 per cent of those seats and the NDP to win 33 per cent."

Ross and faculty colleagues Prof. James Brander and Prof. Werner Antweiler are directors of UBC-ESM, with Joyce Berg and Robert Forsythe from the University of Iowa.

Following a good start last October, Ross said market activity dwindled once the provincial election was postponed. Now the markets are starting to move again and Ross expects the number of traders to increase well beyond the 35 currently active traders.

The market has been gaining national exposure recently, with a mention in a recent Maclean's magazine story

about B.C. politics as well as coverage in the Montreal Gazette and Montreal's La Presse. The Vancouver Sun will continue to provide updated information on market activities in the months and weeks preceding the election.

An information package is available and can be requested by e-mail at ubcesm@commerce.ubc.ca or by calling 822-8614.

Hall named in ranks of America's top doctors

Dr. Judith Hall has been named one of the 1,000 best doctors in America in the March issue of *American Health* magazine, one of only two Canadian physicians to make the list.

Hall is professor and head of the Dept. of Pediatrics at UBC and British Columbia's Children's Hospital and a professor of Medical Genetics.

The magazine's report is based on confidential survey responses from more than 3,200 of the doctors' peers at 350 leading medical centres across the United States.

American Health is a mainstream consumer health publication with a readership of over four million. The guide, which lists doctors in about 60 adult and pediatric specialties, was completed to help readers find the best possible health care.

Hall is a specialist in genetic counsel-

ling with a subspecialty in congenital anomalies.

Her research interests are human congenital anomalies, the genetics of short stature, newly recognized mechanisms of disease such as mosaicism and imprinting, the natural history of genetic disorders and the genetics of connective tissue disorders.

Born in the U.S., Hall holds dual citizenship and still performs clinical work at the University of Washington in Seattle, where she attended medical school and helped develop the clinical genetics service program.

As a clinical geneticist, she has been involved in health care delivery issues, child advocacy and the application of new genetic technology to patient care. Hall has also developed links with lay groups interested in specific genetic diseases.



Hall

In Memoriam

George Christopher Archibald: 1926-1996

Teacher and colleague

After a long illness, Prof. Emeritus Chris Archibald died Feb. 27, 1996, in Appleby-In-Westmoreland, England.

Archibald played a major role in the development of the UBC Dept. of Economics. He reorganized the graduate program and was responsible for many faculty appointments.

Archibald joined the department in 1970 having previously held positions at the University of Otago in New Zealand, the London School of Economics and the University of Essex. He was a fellow of the Econometric Society and the Royal Society of Canada.

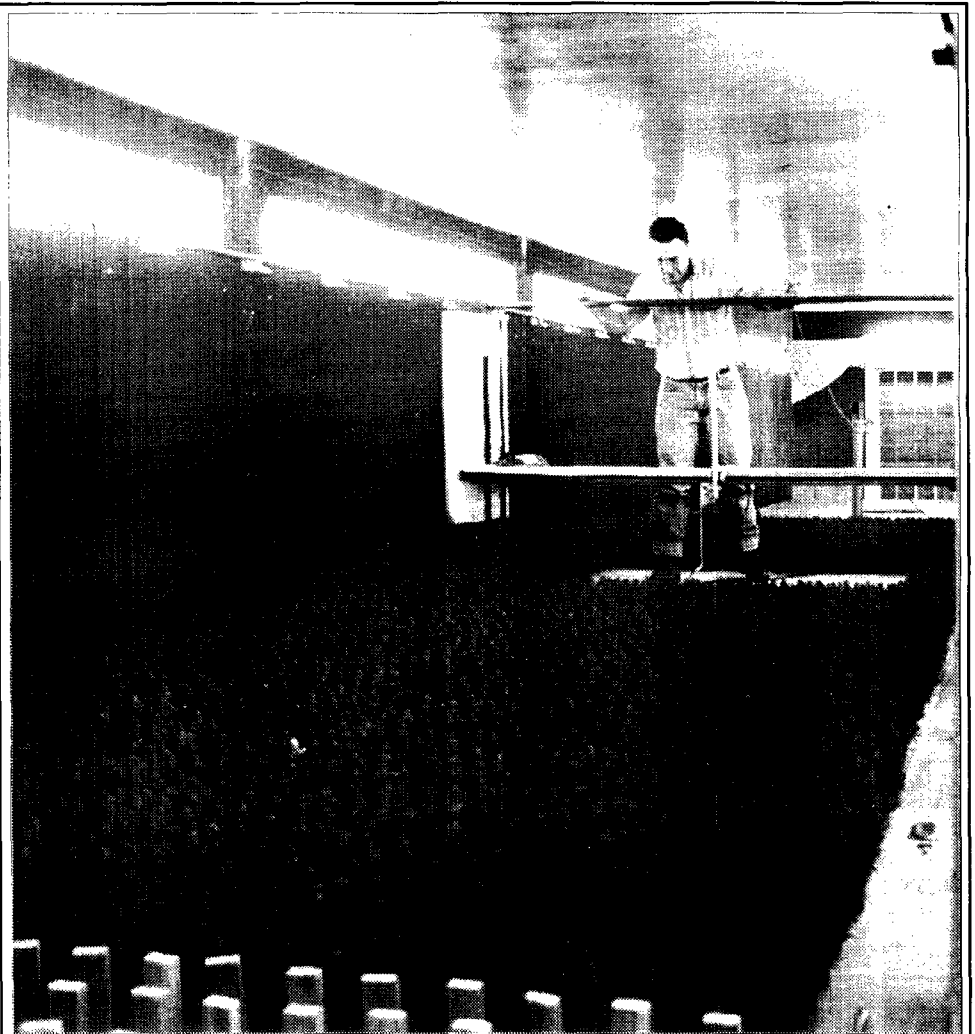
His publications made significant contributions to macroeconomics,

microeconomics, welfare economics, methodology, and the history of economic thought.

His last book, *Information, Incentives, and the Economics of Control*—published two years ago—reflected his lifelong concern with the use of market mechanisms in conjunction with government action to attain efficient and equitable states of the economy.

"He was a good teacher and colleague, reading and commenting on the work of students and faculty alike. His colleagues, students, and friends will miss him," said Economics Prof. Charles Blackorby.

He is survived by his wife Daphne Archibald.



Stephen Forgacs photo

Green Giant

Alberto Orchansky, a post doctoral student working with Soil Science Assoc. Prof Michael Novak, stands in a forest clearcut recreated in an engineering wind tunnel. The wind tunnel and simulated forest are being used to examine the effects of wind on trees standing at the edge of clearcut sections. Sensors estimate wind speed and turbulence and stress on the trees.

Events open doors for end to discrimination

UBC will mark the International Day for the Elimination of Racial Discrimination on Mar. 21 with a series of events in the Student Union Building ballroom.

"This day provides the UBC community with an opportunity to acknowledge the pervasive role played by racism throughout the world, including our own campus, and discuss ways to combat it," said Sharon Kahn, associate vice-president, Equity. In 1995, Kahn added, the Equity Office received 33 complaints related to race and ethnicity.

One of the highlights of the day is an interactive theatre performance called *Of Roots and Racism: Sharing our Stories*, by the Puente Theatre society.

Created and performed by immigrant women, this dynamic and fun event will help raise awareness about racism and challenges the audience to find solutions.

The performance has two parts. The first is a play that shows different aspects of racism. After each scene the audience is asked to express their thoughts and discuss the best solutions to the problems presented.

Following the play, a scene of discrimination in the workplace is presented and the audience is invited on stage to suggest and act out solutions.

Speaking during the morning session is Hayne Wai, manager of policy development with Multiculturalism B.C.

A UBC graduate, Wai has served on a number of advisory boards and committees dealing with multiculturalism and anti-racism issues and worked for the federal Human Rights Commission.

Other events includes video screenings and a panel discussion by graduate students who will present works in progress on anti-racism and education.

All activities will be held in the SUB ballroom. Admission is free and all members of the UBC community are encouraged to attend. Displays will also be located in the SUB main concourse.

The day's events are sponsored by the Equity Office and the Committee for a Culturally Inclusive Campus, which represents more than a dozen campus units and groups.

March 21: Schedule of Events

Place: SUB ballroom.

Admission is free.

- **10-11:30 a.m. Graduate student panel**
Addresses work in progress on anti-racism and education.
- **11:30 a.m.-12:30 p.m. Who Gets In**
Video exploring the many questions raised by Canada's immigration policy and scrutinizing the economic, social and political priorities it reflects.
- **12:30-1:30 p.m. Racism: Tuum Est**
A talk by Hayne Wai, manager of policy development for Multiculturalism B.C. and formerly with the federal Human Rights Commission. Followed by a discussion period.
- **1:30-3:30 p.m. Of Roots and Racism: Sharing our Stories**
An interactive theatre performance by the Puente Theatre Society, created and performed by immigrant women.
- **3:30-5:30 p.m. Long Time Coming**
Selected videos illustrate issues of racism and its impact in Canada.



Stephen Forgacs photo

Wei Lu (left) weighs her two-month-old baby Louis Belleville while third-year nursing student Salima Janmohamed records the information. The Breast-feeding Support Service in the Acadia Park student housing complex has been helping mothers with concerns or problems relating to breast-feeding and infant development since January. Held each Tuesday from 1:30 to 3:30 p.m., the service is a joint initiative of UBC's School of Nursing and the Vancouver Health Board. It is free of charge and open to all.

Budget

Continued from Page 1

ing and rehabilitation sciences as well as in medicine."

Bressler said the health services research fund will promote interaction between disciplines at UBC as well as between Canadian universities and the private and public sectors.

The Medical Research Council (MRC) will administer the fund and co-ordinate the peer review process. As a partner, MRC will reallocate \$2 million per year from its partnerships envelope over the next five years. Health Canada will contribute \$1 million a year over five years.

Despite the creation of the fund, Bressler said cuts of 3.5 per cent in 1998/99 to the granting councils will further hurt university researchers and have gone beyond the point of increasing competition for research funding to where valuable research efforts are being compromised.

"They're cutting the cream from the cream," he said, quoting a former MRC official. "It's very hard on new investigators to get established and it's equally difficult for well-established laboratories to stay funded."

The cuts include a loss of about \$6.5 million for the MRC, \$12.8 million for the Natural Sciences and Engineering Research Council (NSERC), and \$2.7 million for the Social Sciences and Humanities Research Council (SSHRC). This means that the budgets of NSERC and SSHRC will have been reduced by almost 18 per cent over a four-year period (from 1994/95 to 1998/99), while the MRC's budget has been cut about 13.5 per cent.

Several other areas in the federal budget affect universities and their students.

The government will provide an additional \$80 million a year in tax assistance for students and their families, to be paid through reallocations within the tax system. The education tax credit available to full-time students will be increased from a base amount of \$80 per month to \$100 per month for every month of full-time attendance.

And, the child-care expense deduction will see eligibility broadened by allowing single parents who are in full-time attendance at school to claim the deduction against all types of income. This will also apply to two-parent families where both parents are full-time students.

Deep cuts in last year's budget reduced total transfer (cash and tax points) to the provinces for the support of health, social programs and post-secondary education to a total of \$25.1 billion for 1997/98. This year the government announced it will legislate a five-year funding arrangement covering the years 1998/99 to 2002/23.

The arrangement provides for a two-year freeze in the total transfer ending in 1999/2000, although the cash portion will continue to decline throughout the period.

Clark Warren, manager of Planned Giving in UBC's Development Office, said changes in the budget that will increase incentives for charitable donations will not affect UBC.

"We need to be clear that the recent budget did not add any advantages to those that are already available to donors to UBC through its agent of the Crown foundation," Warren said. "What the budget has done is taken a major step to level the playing field between regular charities and agents of the Crown. It is business as usual at UBC."

Drop-in service helps breast-feeding mothers

by Stephen Forgacs

Staff writer

Mothers who have problems or concerns related to breast-feeding can take advantage of a new support service operated by UBC's School of Nursing.

Faculty members from the School of Nursing, assisted by third-year nursing students, have been working with mothers and their infants since January through the free, drop-in support service on Tuesday afternoons.

Asst. Prof. Roberta Hewat, a lactation consultant, said the support service has met with a strong response. Strategically located in the Acadia Park residential area, which houses dozens of young families, the service has been seeing an average of about five clients in an afternoon, Hewat said.

The support service is a partnership between the School of Nursing and the Vancouver Health Board, through the West Main Health Unit.

"The response has been excellent," said Hewat. "It's easy to spend an hour with one client, so we're very busy."

Hewat or Assoc. Prof. Donelda Ellis are always present during the support service hours and are assisted by two third-year nursing students who are taking the maternity care portion of their degrees.

"We can tell a lot from a child's appearance and activity level," said Hewat, who observes how mother and child interact.

"Since the late 1970s we have a lot more women leaving the hospital breast-feeding," Hewat said. "But maintaining children on the breast is often difficult because of the lack of support services for mothers."

Although resources for breast-feeding mothers exist in Vancouver, many communities in the province do not have access to these services. Without readily available assistance, many mothers give up on breast-feeding if they experience problems. Hewat sees the lack of support services as the biggest obstacle to be overcome when it comes to promoting maintenance of breast-feeding.

The support service staff help with a wide range of breast-feeding-related prob-

lems, Hewat said, adding that most of the mothers who use the service have concerns regarding their baby's growth, sore breasts, or whether or not they're producing enough milk. Pre-natal counseling is available for women who, because of breast implants or breast-reduction surgery, have concerns about their ability to breast-feed.

Research shows the benefits of breast-feeding include ideal nutrition, optimal brain growth, and the development of immunological protection against infections while decreasing the risk of juvenile diabetes and childhood leukemia, Hewat said. Breast-fed children are also less likely to develop severe food allergies.

"There is also a very important emotional component," said Hewat. "Breast-feeding is comforting for both mother and baby."

Mothers who are unable to breast-feed sometimes require counselling to assure them that this does not mean they are failing as a mother, Hewat said. Lactation aids are used in some circumstances to help these mothers gain the emotional bond involved in feeding an infant.

The nursing students involved with the support service gain practical experience while fulfilling course requirements that include hospital and community service.

Weight before feeding at each visit is taken then plotted on a graph that shows average growth rates for bottle-fed babies. Studies now underway will eventually provide the same information for breast-fed children, Hewat said.

Although the students do much of the work now, Hewat sees the service becoming more self-directed with mothers taking over tasks. Faculty and students will continue to play a supporting and advisory role.

The Breast-feeding Support Service takes place every Tuesday from 1:30 p.m. to 3:30 p.m. in the Fireside Lounge of the Acadia Fairview Commons Block, 2707 Tennis Crescent, UBC. Appointments are not required and parents from any part of the city are welcome. For more information call Roberta Hewat at 822-7464 or Donelda Ellis at 822-7467.

Proton

Continued from Page 1

stop the protons exactly where we want thereby sparing surrounding healthy cells."

Protons are heavy, positively charged particles and, when delivered at high speeds in narrow beams, their weight allows them to penetrate most tissues. Protons deposit nearly all their radiation dose in a very narrow band near the end of their range of penetration, which, in the case of eye therapy, is a maximum of four centimetres. This band can be spread out and shaped to correspond precisely with the boundaries of a tumour in three dimensions.

Dose precision is the primary advantage that proton therapy offers over other treatment practices.

Apart from eye removal, another conventional method of melanoma treatment is sewing a radioactive disc onto the eye wall directly under the tumour and leaving it on for about a week. A drawback of this method is that in order to kill the entire tumour, the patch tends to radiate beyond the damaged area. The dose is also not uniform.

The novelty of proton therapy lies with the exacting nature of the exercise which culminates in the four-dose treatment.

The TRIUMF facility, a collaborative effort among UBC's Dept. of Ophthalmology, the B.C. Cancer Agency and TRIUMF, was in the process of setting up operations when Hannam was diagnosed. Dr. Tom Pickles, from the B.C. Cancer Agency, expects to treat about 30 patients a year at TRIUMF. For each patient, the drill is the same.

In a small surgical procedure about two weeks before the actual dose is ad-

ministered, Dr. Kate Paton, clinical assistant professor of ophthalmology, sews three or four metal markers onto the outside of the eye. Placed at the margins of the tumour, the tiny clips allow the tumour to be outlined on X-ray films.

Next, the patient is fitted with a plastic mesh face-mask and bite-block. These items, attached to a special chair in the treatment room, immobilize the head and upper jaw in a set position. Patients undergo a treatment simulation of one to two hours allowing a radiation oncologist to align the markers with the proton beam.

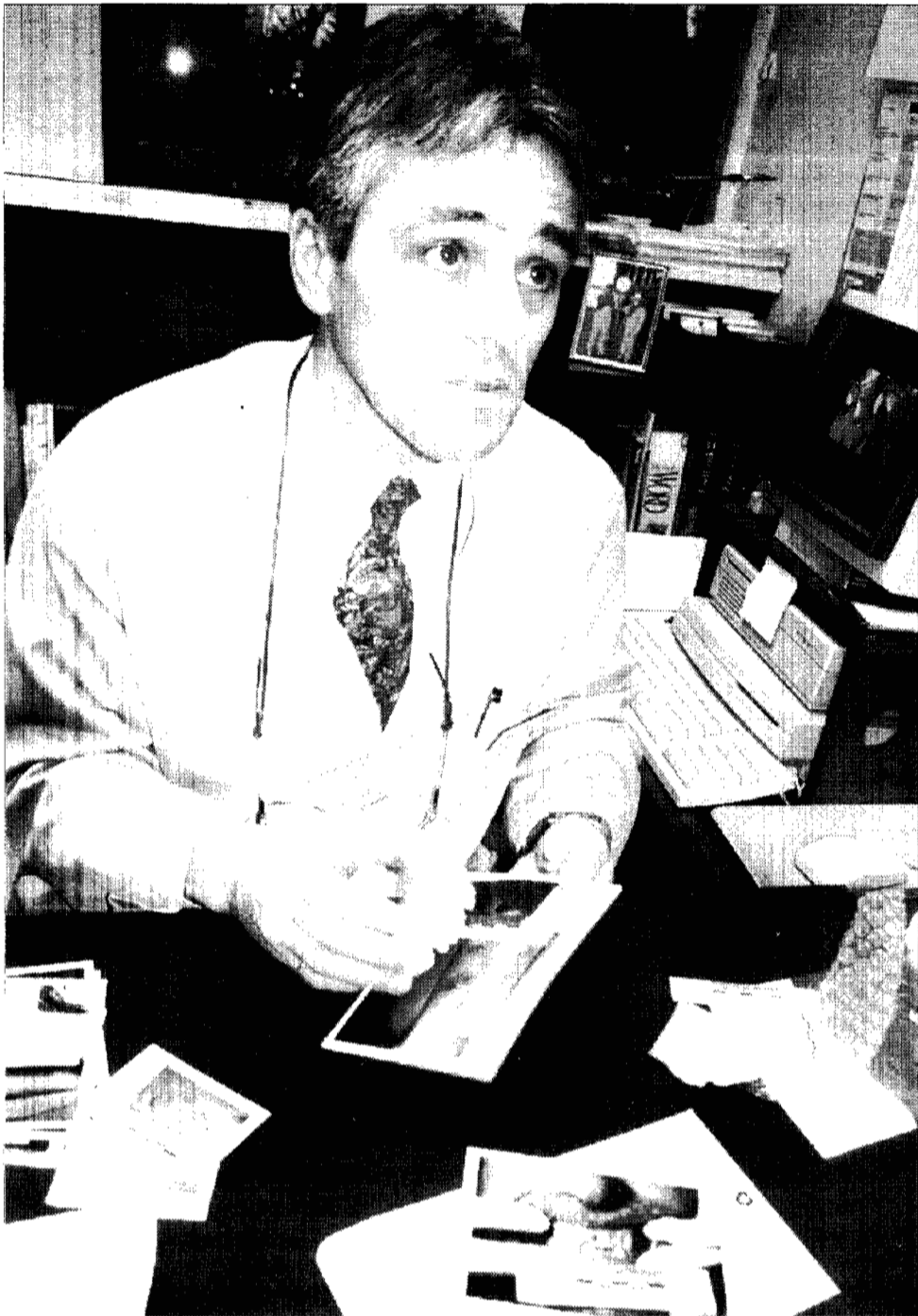
This information, combined with clinical and ultrasound data, is used to create a complex 3-D computer model of the tumour and the eye. Data is then manipulated to generate a plan which optimizes treatment while minimizing damage to vital structures such as the optic nerve.

A patient's gaze is directed to a specific spot while the beam is on. The radiation beam is monitored throughout the treatment so that if the eye moves, the beam is shut off. A magnifying closed-circuit television focused on the pupil verifies that the alignment remains true.

Of the patients treated so far, six have come from B.C., three each from Manitoba, Alberta and Saskatchewan and one from Iran.

Blackmore said specialists are looking into using proton therapy for other types of cancers, specifically those in the head and neck.

UBC's proton beam chamber was financed through a grant from the Woodward Foundation in consultation with the B.C. Cancer Agency's Vancouver Clinic.



Stephen Forgacs photo

Aiding in the identification of missing children and DNA analysis of saliva are among the pioneering research being conducted in the newly formed Bureau of Legal Dentistry headed by David Sweet of the Dept. of Oral Medical and Surgical Sciences. Funded in part by the provincial government, the bureau will be the first of its kind in Canada.

Unique dentistry bureau to aid crime investigators

The Faculty of Dentistry will be helping police take a BOLD step in the fight against crime.

The faculty and the provincial government recently announced the creation of the Bureau of Legal Dentistry (BOLD), Canada's first facility devoted exclusively to police work, research and instruction in the use of forensic dentistry for crime investigation and prosecution.

Funding for BOLD was part of a \$1.6 million package of anti-crime measures announced by the government. They will contribute \$500,000 to the project and the faculty will provide salaries, secure space and administrative support.

The bureau will be headed by David Sweet, a lecturer in the Dept. of Oral Medical and Surgical Sciences who also acts as a forensic odontology consultant to the Provincial Coroner's Service, the RCMP and the Vancouver and Victoria police departments.

"BOLD will provide a conduit through which the dental experts on the team may bring the power of science further into the realm of the justice system," Sweet said.

Sweet predicted that the results of BOLD research, which will be shared worldwide with police agencies and experts in a variety of forensic disciplines, will have significant consequences.

"The advances produced in this laboratory will help police solve crimes and the justice system deal with the persons responsible. More crimes will be

solved and more criminals will be apprehended," he said.

One of BOLD's inaugural research projects involves the identification of missing children. It will build on a pilot study that combined the talents of UBC dentists, the RCMP, the Dept. of Computer Science and the Media and Graphics Interdisciplinary Centre (MAGIC).

That study developed a method of predicting and illustrating the changes in facial appearance of individuals over time using digitized animation software.

Another project will study the recovery of DNA evidence from teeth and saliva. This will give investigators the ability to gather evidence from previously unconventional sources such as toothbrushes, dentures or from human skin in the case of a bite mark injury.

Researchers will also develop 3-D computer models of bite mark evidence to study the dynamics of the biting process and evaluate the use of computers to compare specific teeth to bites on objects or skin.

Sweet plans to continue his pioneering work in the forensic analysis of DNA taken from the saliva left in bites and sucks on human skin. He is currently the only person in the world researching and publishing on this topic.

BOLD will offer training to police and prosecutors in the new technologies as well as develop new undergraduate courses and graduate research training for forensic experts from Canada and internationally.

Sculpture finds perfect place in arts precinct

by Gavin Wilson

Staff writer

UBC is the new home of a massive sculpture that once greeted visitors to Vancouver International Airport.

The piece, *Cumbria*, was recently rescued by artist Toni Onley after the airport authority dismantled it and put it into storage.

Preparations are being made to install the 18,000-kilogram sculpture completely rebuilt and with a fresh coat of intense chrome yellow paint by the end of April in the courtyard between the Lasserre Building and the Morris and Helen Belkin Art Gallery.

Fine Arts Prof. John O'Brien, chair of the President's Committee on University Art, said he hopes its arrival heralds a new era of public art on campus.

"It's a very impressive and important work of modernist sculpture, one of the major pieces of sculpture from the '60s in this country. We're very excited that it's coming here," he said.

Cumbria arrived at UBC by a circuitous route.

Sculpted by Vancouver-born artist Robert Murray in 1966-67, it was first shown in Manhattan's Battery Park and was subsequently exhibited at Toronto's city hall and on the grounds of the Art Gallery of Ontario.

The Ministry of Transport purchased it in 1969 for display at Vancouver's newly opened airport terminal.

At first it was granted a prominent place on a height of land that gave it a soaring effect. Later, however, it was moved to a median beside a gas station and between busy traffic on the approach to the airport.

"It was a bad location. People didn't get a chance to view it properly. It be-

came a drive-by sculpture," said Onley.

And then last year, the airport authority decided it no longer wanted the sculpture at all.

When Onley discovered that the work had been "rudely removed" with the aid of a backhoe, and without telling the artist, he was outraged. He called Murray, whom he has known since they were students in 1958, at his rural Pennsylvania home.

"I got him pretty bent out of shape about it," Onley said.

In the ensuing controversy, Transport Canada agreed to donate the work to UBC and the airport authority paid for its restoration, which was overseen by Murray.

"Bob's really excited about it coming to UBC and so am I. People will now be able to see it and appreciate it in an appropriate setting," Onley said.

O'Brien said the sculpture will send a clear message to passers-by that they are in UBC's arts precinct, which includes the art gallery, the Lasserre Building, the Music Building, Frederic Wood Theatre and the Chan Centre for the Performing Arts.

Also significant is the fact that *Cumbria* represents the first large-scale public sculpture installed by the university in nearly 20 years.

O'Brien said he hopes this will encourage other donations of public art to UBC and build greater recognition on campus of the university's role in providing the university.

He would like to see the university adopt a policy that a small percentage of each new building's budget be set aside for commissioned works of art. This is commonly done by municipal governments in cities throughout Europe and North America, including Vancouver, he said.

Grads among stars on Theatre Row

Five UBC alumni are among the newest inductees to Starwalk, the parade of stars located on Granville Street which salutes significant achievement in the arts.

Entertainer John Gray, television producer Philip Keatley, patron Iby Koerner, humourist Eric Nicou and conductor Doug Parker were honored Mar. 6 at a ceremony and public unveiling of plaques recognizing their outstanding contributions to entertainment in the province, across Canada and internationally.

Inaugurated by the B.C. Entertainment Hall of Fame at the Orpheum in 1994, Starwalk currently includes 60 of B.C.'s most eminent entertainment personalities.

Gray is an award-winning author, screenwriter, composer and performer for stage, television, film and radio. He is well-known for his musicals including *Billy Bishop Goes to War* and *Rock and Roll*.

A director, producer and broadcasting executive, Keatley is hailed as the visionary behind a unique regional department at CBC Television in Vancouver

which specialized in dramatic series. Most notable among his many successes is *The Beachcombers* which ran for 20 seasons and is seen in 45 countries.

Koerner was an outstanding patron of the arts who was an influential leader on the board of the Vancouver Festival. Igor Stravinsky gave his only Canadian performer at her bequest.

Winner of three Leacock Awards for humour, Nicol also served as a faculty member at UBC. The renowned journalist and playwright contributed greatly to Vancouver's blossoming theatre community in the '60s and '70s. His original production of *Her Scienecman Lover* was performed every year for 38 years by The Players Club on campus.

Parker, a Vancouver-born pianist, arranger and conductor, started his career in Los Angeles playing with the big bands of Harry James, Russ Morgan and Ray Anthony. Returning to B.C. in 1957, he embarked on a long and successful career with the CBC, including eight years as an arranger/conductor for *The Irish Rovers* television show.



Koerner



Gray

Calendar

March 24 through April 6

Sunday Mar. 24

Green College Performing Arts Group
UBC Early Music Ensembles. Green College, Graham House, 2:30pm. Call 822-6067.

Green College Performing Arts Group
Piano Recital. Brandon Konoval. Green College, Graham House, 8pm. Call 822-6067.

Monday, Mar. 25

Mechanical Engineering Seminar
A Robotic Work Cell For Can Filling Automation. Elizabeth Croft. Mechanical Engineering. CEME 1202, 3:30-4:30pm. Refreshments. Call 822-3904.

Biochemistry and Molecular Biology Seminar
Ribonuclease E And Its Friends. Stanley Cohen. Stanford U. IRC#4, 3:45pm. Refreshments at 3:30pm. Call 822-9871.

Zoology Seminar
Central Chemoreceptors: Location And Mechanism. Gene Nattie. Dartmouth. BioSciences 2449, 4:30pm. Refreshments. Call 822-2310.

Astronomy/Geophysics Seminar
Inferring Solar Kinematics Using Helioseismology. Philip Stark. Berkeley. Geophysics and Astronomy 260, 4pm. Refreshments from 3:30pm. Call 822-2696/822-2267.

Green College Speaker Series
Rural Women And Actually Implemented Strategies For Economic Development In Reform Era China. Ellen Judd. Anthropology, U of Manitoba. Green College, Coach House, 8pm. Call 822-6067.

IAM Colloquium (Institute of Applied Mathematics)
Dinesh Pai. CICS/CS. CICS/CS 322, 3:30pm. Call Prof. Brian Wetton at 822-3784.

Tuesday, Mar. 26

Oceanography Seminar
Processes Controlling Metal Fluxes Across The Sediment-Water Interface In A Reservoir Impacted By Acid Mine Drainage. Laurie Balistrieri. U of Washington. BioSciences 1465, 3:30pm. Call 822-2821.

Animal Science Seminar Series
Studies On In-Vitro Embryo Production In Cattle. J. Kurtu, grad student. MacMillan 160, 12:30pm. Refreshments. Call 822-4593.

Pharmaceutical Sciences Seminar
Reduction Of Calcium Affinity Of Calmodulin Site IV In A D133E Mutant. Xiaochun Wu, grad student. IRC#3, 12:30-1:30pm. Call 822-4645.

Botany and Centre for Biodiversity Research Seminar
Ethnobotany At The Interface Between Human Needs And The Environment. Tom Johns. Centre for Nutrition and the Environment of Indigenous Peoples. BioSciences 2000, 12:30-1:30pm. Call 822-2133.

Statistics Seminar
MCMC Inference In Model-Based Cluster Analysis And Regularization In Discrimination. Halima Bensmail. U of Washington. CSCI 301, 4-5:30pm. Refreshments. Call 822-0570.

Green College Speaker Series
What's That Football Field Doing Up In The Sky? Canada. Manned Space Research And The International Space Station. Donald Brooks. Pathology. Green College, Coach House, 5:30-6:30pm. Reception in Graham House, 4:45-5:30pm. Call 822-6067.

Green College Speaker Series
Getting Your Work Published. Jean Wilson, senior editor. UBC Press; Laurie Ricou, editor. *Canadian Literature*; Richard Ericson, founding co-editor. *Canadian Journal of Sociology* and consultant to U of Toronto Press. Host, Ken Carty, chair. Publications Committee. UBC Press. Green College, Coach House, 7:30pm. Call 822-6067.

Lectures in Modern Chemistry
Metal Complex Reversible Oxygen Sorbents For The Separation Of Air. Guido Pez. Air Products and Chemicals Inc. Chemistry 250 south wing, 1pm. Refreshments from 12:40pm. Call 822-3266.

MOA Public Talk
Chief Vernon Jacks Of Tsvicum Village In Saanich, BC, Discusses The Negotiated Return Of Objects To His Family From The Museum. MOA, 7:30pm. Call 822-5950.

Identification Clinic
The Museum's Staff Will Help Identify Your Objects And Provide Conservation Advice. MOA, room 217, 7-8pm. Please call in advance to indicate what you intend to bring. Call 822-5087.

UBC Opera Theatre
Paul Hindemith, *Hin Und Zurück*; J.M. Syngé, *Riders To The Sea*; J. Offenbach, *Mr. Choufleuri*. Nancy Hermiston, director. Old Auditorium, 8pm. Adults, \$10; student/seniors, \$6. Call 822-3113.

Wednesday, Mar. 27

Respiratory Research Seminar Series
A Survey Of Physicians Ordering Thoracic CT Scans: Impact On Diagnosis And Treatment. Dr. Mark Turner. Medicine. Vancouver Hospital/HSC, doctors residence, 3rd floor conference room, 2775 Heather St., 5-6pm. Call 875-5653.

Pharmaceutical Sciences Seminar
Potential For Exacerbation Of Seizures By Anti-epileptic Drugs. Peter Loewen. Pharm.D student. Vancouver Hospital/HSC, Koerner Pavilion G-279, 4:30-5:30pm. Call 822-4645.

Microbiology and Immunology Seminar Series
Linear Plasmids Of Streptomyces: Novel Solutions to DNA Replication. Stanley Cohen. Stanford U. Wesbrook 201, 12:30-1:30pm. Call 822-3308.

Ecology Seminar
Dynamic Optimization Model For Vertical Migration Of Kennedy Lake Diatom. David Ghan. Zoology. Family/Nutritional Sciences 60, 4:30pm. Refreshments in Hut B-8, 4:10pm. Call 822-2141.

Centre for Japanese Research Seminar
History Of Investigation: A Case Of

The Hokkedo Konpon Mandara. Moritaka Matsumoto. Fine Arts. CK Choi conference room, 12:30-2pm. Call 822-2629.

Issues in Post Secondary Education Seminar
What Are The Choices For The Funding Of Post-Secondary Education. Jon Kesselman. Economics. Green College, Coach House, 3-5pm. Call 822-6067.

Faculty Financial Planning Lecture Series
Optimize Your Investments With Strategic Asset Allocation. Donna Molby. Scotia McLeod. Hennings 201, 12:30-1:20pm. Call 822-1433.

Cultural And Media Studies Interdisciplinary Group
Anglo-American Constructions Of French Feminism. Christine Delphy. French feminist and scholar. Green College, Coach House, 5:30-6:30pm. Call 822-6067.

19th Century Colloquium Series
The Body In Question. Carla Paterson. History; Lynn Ruschinsky. Fine Arts; Joy Dixon. History. Moderator, Charity Mewburn. Fine Arts. Green College, Coach House, 8-10pm. Call 822-6067.

Public Reading
Joy Kogawa. Buchanan A-100, 12:30-1:30pm. Call 822-0699.

Surgery Grand Rounds Lecture
Can Ethics Be Taught? Dr. Vincent Sweeney, prof. emeritus. Medicine. Dr. Alister Browne. Medicine. GF Strong auditorium, 7am. Call 875-4136.

Orthopaedics Grand Rounds
Traumatic And Post-Traumatic Abnormalities Of The Carpus. Dr. Dirk Sweeney. Radiology. Vancouver Hospital/HSC, Eye Care Centre auditorium, 7am. Call 875-4272.

UBC Opera Theatre
Paul Hindemith, *Hin Und Zurück*; J.M. Syngé, *Riders To The Sea*; J. Offenbach, *Mr. Choufleuri*. Nancy Hermiston, director. Old Auditorium, 8pm. Adults, \$10; student/seniors, \$6. Call 822-3113.

Thursday, Mar. 28

Botany Seminar
Medicinal Plants Of Nepal. Robin Taylor. PhD candidate. BioSciences 2361, 12:30-1:30pm. Call 822-2133.

Research Seminar
Analyzing Focus Group Data: Opportunities And Challenges. Rosalie Starzomski. Nursing. Vancouver Hospital/HSC, UBC Pavilion T-185/86, 12:30-1:30pm. Call 822-7453.

Genetics Graduate Program Seminar
Conservation Of Animal Genetic Resources. Kimberly Cheng. Animal Sciences. Wesbrook 201, 4:30pm. Refreshments at 4:15pm. Call 822-8764.

Physiology Seminar
Interactions Among Inward Rectifier Subunits. J.P. Adelman. Vollum Institute. Copp 2002, 1pm. Call 822-2083.

Critical Issues in Global Development Seminar
Racism In The Canadian Education System. John Willinsky. Centre for Curriculum and Instruction. Green College, Coach House, 5:30-6:30pm. Call 822-6067.

Invited Speaker Seminar Series
Scientific Visualization Of Large And Complex Data Sets. Jane Wilhelms. U of California. Santa Cruz. CICS/CS 208, 4pm. Refreshments. Call 822-3061.

Green College Speaker Series
Fireside Chat With Cecil And Ida Green Visiting Professor. Paul Falkowski. Brookhaven National Laboratory. Green College, Coach House, 7:30pm. Call 822-6067.

Architecture Lecture/Slides
A Presentation Of The Work Of Brit Andersen/Peter O'Gorman, architects. Lasserre 102, 12:30pm. Call 822-2779.

Physics Colloquium
Instability Cascades In Droplet Fission. Sid Nagal. U of Chicago. Hennings 201, 4pm. Call 822-3853.

Cecil and Ida Green Visiting Professor
Coral Symbiosis: Why Junk Food Can Be Healthy. Paul Falkowski. Brookhaven National Laboratory. BioSciences 2000, 12:30pm. Call 822-5675.

Concert
UBC Javanese Gamelan, Music And Dance. Alan Thrasher, director. Asian Centre auditorium, 2pm. Call 822-3113.

Friday, Mar. 29

Pharmaceutical Sciences Seminar
Cardiac Lipoprotein Lipase Regulation During Diabetes And Hypertension. Brian Rodrigues. Pharmacology and Toxicology. IRC#3, 12:30-1:30pm. Call 822-4645.

Occupational Hygiene Program Seminar Series
Health Issues In The Oil And Gas Industries. Hadrian Evans, former industrial hygienist. Gulf Canada. Vancouver Hospital/HSC, Koerner Pavilion G-279, 12:30-1:30pm. Call 822-9595.

Theoretical Chemistry Seminar
The Snider Equation: Inclusion Of Density Corrections. G.W. Wei. Chemistry. Chemistry D402, centre block, 4pm. Call 822-3266.

Centre for Korean Research Seminar
The Politics Of Haircutting In Modern Korea: A Symbol Of Modernity And The 'Righteous Army Movement' (1895-96). Sukman Jang. Asian Studies. CK Choi conference room, 3:30-5pm. Call 822-2629.

Chemical Engineering Seminar
Liquid Jets For Determining CO₂-Amino Absorption Characteristics. Keith Redford, grad student. ChemEng 206, 3:30pm. Refreshments in 204 at 3:15pm. Call 822-3238.

Mathematics Colloquium
Some Progress In Banach Space Theory And Exotic Infinite Dimensional Structures. Bernard Maurey. U Paris 7. Mathematics 104, 3:35pm. Refreshments at 3:15 Mathematics Annex room 1115. Call 822-2666.

Health Care and Epidemiology Rounds
Dietary, Family History And Other Risk Factors For Prostate Cancer. Dr. Rick Gallagher, epidemiologist. Mather 253, 9-10am. Call 822-2772.

Paediatrics Grand Rounds
Clinicopathological Conference. Dr. Paul Sorensen, Pathology; Dr. Fergall Magee, Pathology; Dr. Colin Yong, Paediatrics. GF Strong auditorium, 9am. Call 875-2307.

Intercultural Language Studies
Intercultural Communication - A Health Discipline's Approach. Ralph Masi, Medicine. U of Toronto. Green College, Coach House, 12:30pm. Call 822-5546/822-3753.

UBC Opera Theatre
Paul Hindemith, *Hin Und Zurück*; J.M. Syngé, *Riders To The Sea*; J. Offenbach, *Mr. Choufleuri*. Nancy Hermiston, director. Old Auditorium, 8pm. Adults, \$10; student/seniors, \$6. Call 822-3113.

Saturday, Mar. 30

Vancouver Institute Lecture
Phytoplankton, Oil Futures And Global Climate Change. Paul Falkowski. Brookhaven National Laboratory. IRC#2, 8:15pm. Call 822-3131 during normal business hours.

Workshop
Going It Alone: A Workshop About Freelance Opportunities. Alexandra Bradley, BLS, CRM and Denise Bonin, MLS. University Golf Club, 9am-4pm. \$150 (lunch included). Call 822-2404.

UBC Opera Theatre
Paul Hindemith, *Hin Und Zurück*; J.M. Syngé, *Riders To The Sea*; J. Offenbach, *Mr. Choufleuri*. Nancy Hermiston, director. Old Auditorium, 8pm. Adults, \$10; student/seniors, \$6. Call 822-3113.

UBC REPORTS

CALENDAR POLICY AND DEADLINES

The *UBC Reports* Calendar lists university-related or university-sponsored events on campus and off campus within the Lower Mainland.

Calendar items must be submitted on forms available from the UBC Public Affairs Office, 310-6251 Cecil Green Park Road, Vancouver B.C., V6T 1Z1. Phone: 822-3131. Fax: 822-2684. Please limit to 35 words. Submissions for the Calendar's Notices section may be limited due to space.

Deadline for the April 4 issue of *UBC Reports* — which covers the period April 7 to April 20 — is noon, March 26.

Calendar

March 24 through April 6

Sunday, Mar. 31

Green College Performing Arts Group
For Whom The Southern Belle Tolls. Jennifer Covert. Theatre and Film; Andra Smith. Neuroscience; Brent Whitted. English; John Oesch. Commerce. Green College. Graham House. 8pm. Call 822-6067.

Concert

Collegium Musicum. John Sawyer/Morna Edmundson, co-directors. Vancouver School of Theology. Chapel of the Epiphany. 8pm. Call 822-3113.

Monday, Apr. 1

Botany Seminar
Molecular Basis Of Photoacclimation In Unicellular Algae. Paul Falkowski. Brookhaven National Lab. BioSciences 2449. 12:30-1:30pm. Call 822-2133.

Zoology Seminar
Acid-Base Balance In Fish And Mammals. Eric Swenson. Physiology. U of Washington. BioSciences 2449. 4:30pm. Refreshments. Call 822-5709.

Biochemistry and Molecular Biology Seminar
Protein Determinants Of Redox Potentials And Thermostability. The Rubredoxin Paradigm. Robert A. Scott. U of Georgia. IRC#3. 3:45pm. Refreshments at 3:30pm. Call 822-9871.

Astronomy Seminar
The Luminosity Function Of Nearby Galaxies. Ron Marzke. Dominion Astrophysical Observatory. Hennings 318. 4pm. Refreshments from 3:30pm. Call 822-2696/822-2267.

Archaeology Lecture
The Nikopolis Project: Interdisciplinary Survey And Space-Age Technologies In Epirus, Greece.

James R. Wiseman. Boston U. MOA theatre gallery. 8pm. Reception following. Call 822-2889.

Cecil and Ida Green Visiting Professor

The Molecular Basis Of Photoacclimation In Unicellular Algae. Paul Falkowski. Brookhaven National Laboratory. BioSciences 2449. 12:30pm. Call 822-5675.

Tuesday, Apr. 2

Oceanography Seminar
The Molecular Basis Of Iron Limitation Of Phytoplankton Photosynthesis In The Ocean. Paul Falkowski. Brookhaven National Lab. BioSciences 1465. 3:30pm. Call 822-2821.

Botany and Biotechnology Seminar
The Phenylpropanoid Pathway In Sickness And In Health. Richard Dixon. director. Samuel Robert Noble Foundation. BioSciences 2000. 12:30-1:30pm. Call 822-2133.

Pharmaceutical Sciences Seminar
Pharmacokinetics And Metabolism Of Diphenhydramine In Pregnant Sheep. Sanjeev Kumar. grad student. IRC#3. 12:30-4:30pm. Call 822-4645.

Cecil and Ida Green Visiting Professor
The Molecular Basis Of Iron Limitation Of Phytoplankton Photosynthesis In The Ocean. Paul Falkowski. Brookhaven National Laboratory. BioSciences 1465. 3:30pm. Call 822-5675.

Faculty of Education Lecture
In School: Our Kids. Our Teachers. Our Classrooms. Ken Dryden. Scarfe 100. 12-noon. Call 822-6239.

Graduate and Faculty Christian Forum
Postmodern Epistemology: Are We Stuck With Our Relatives. David

Ley. Geography. Buchanan penthouse. 4:15pm. Refreshments at 4pm. Call 822-2728.

Faculty Women's Club

Is Multiculturalism Working? A Look At Multiculturalism In The Future In Canada. Mobina Jaffer. Cecil Green Park House. 1pm. Refreshments following. Call 228-1116.

Concert

UBC Chinese Ensemble. Alan Thrasher. director. Asian Centre auditorium. 1:30pm. Call 822-3113.

Wednesday, Apr. 3

Respiratory Research Seminar Series
Lung Infections In Patients With Cystic Fibrosis: Novel Approaches To Prevention. Dr. David Speert. Paediatrics. Vancouver Hospital/HSC. doctors residence. 3rd floor conference room. 2775 Heather St.. 5-6pm. Call 875-5653.

IAM Colloquium (Institute of Applied Mathematics)
A Causal Bifurcation Sequence Involving Chaotic Structures. Andrew Foster. Memorial U. Old Computer Science Bldg., room 301. 3:30pm. Refreshments at 3:15pm. Call 822-5889.

Lunchtime Lecture
Sleep Thieves. Stanley Coren. Psychology. speaks about his latest book. UBC Bookstore. 12:30pm. Call 822-2665.

Orthopaedics Grand Rounds
Third World Surgery: Angolan Experience. Dr. Ken Foster. Plastic Surgery. Vancouver Hospital/HSC. Eye Care Centre auditorium. 7am. Call 875-4272.

Noon Hour Concert
UBC Symphonic Wind Ensemble Plays Student Concerto Competition Winners. Old Auditorium. 12:30pm. Call 822-3113.

Centre for India and South Asia and the UBC Library
Presentation To UBC Of Dr.

Ambedkar's Writings. Guru Ravi Das Youth Association and guests. CK Choi 120. 2-5pm. Call 822-2629

Thursday, Apr. 4

Genetics Graduate Program Seminar
Mapping. Characterization. And Cosmid Rescue Of Essential Genes In The dpy-5-unc-13(l) Region Of

Caenorhabditis Elegans. Jennifer McDowall. PhD candidate. Wesbrook 201. 4:30pm. Refreshments at 4:15pm. Call 822-8764.

Centre for Intercultural Language Studies Symposium

Establishing A New Interdisciplinary Graduate Programme In The Province? Green College. coach house. 12:30-2:30pm. Call 822-5546/822-3753.

Notices

Springtime Food Bank Drive
Now until April 4. Help us feed the Vancouver Food Bank with a donation of non-perishable food. Bins located in Bookstore front lobby. Weekdays 9am-5pm. Saturday 10am-5pm.

Library Workshops
UBC Library offers more than 100 workshops each term on how to search UBCLIB, the Library's online catalogue/information system and how to search electronic periodical indexes and abstracts. Call or visit individual branches and divisions for course descriptions and schedules.

Badminton Drop-In
Faculty/Staff/Grad Students are welcome at the Student Recreation Centre. Mondays. 6:30-8pm. and Wednesdays. 6:45-8:15pm. Bring your library card. Check for cancellations: ratkay@unix.infoserve.net or call 822-6000.

Volleyball
Faculty. Staff and Grad Student Volleyball Group. Every Monday and Wednesday. Osborne Centre. Gym A. 12:30-1:30pm. No fees. Drop-ins and regular attendees welcome for friendly competitive games. Call 822-4479 or e-mail: kdes@unixg.ubc.ca.

Morris and Helen Belkin Art Gallery
Tuesday - Friday 10am-5pm; Saturday. 12-5pm. 1825 Main Mall. Call 822-2759.

Faculty Development
Would you like to talk with an experienced faculty member, one on one, about your teaching concerns? Call the Centre for Faculty Development and Instructional Services at 822-0828 and ask for the Teaching Support Group.

Fitness Appraisal
The John M. Buchanan Exercise Science Laboratory is administering a comprehensive physiological assessment program available to students, staff, and the general public. A complete fitness assessment with an interpretation of the results takes approximately one hour and encompasses detailed training prescription. A fee of \$50 for students and \$60 for all others is charged. For additional information or an appointment, please call 822-4356.

Parents in Long-Term Care Study
Daughters with a parent in a care facility are invited to participate. Study focuses on the challenges of visiting/providing care and its effect on well-being. Involves interviews/responses to questionnaires. Call Allison. Counselling Psychology at 946-7803.

Surplus Equipment Recycling Facility
Weekly sales of furniture, computers, scientific etc. held every Wednesday. noon-5pm. SERF. Task Force Building. 2352 Health Sciences Mall. Call 822-2582 for information.

Chronic Low Back Pain Research
The Dept. of Counselling Psychology at the University of British Columbia is looking for women with chronic low back pain to volunteer to participate in a research project that is aimed at understanding what factors help or hinder peoples' ability to manage pain on a daily basis. Participants will be asked to meet with a researcher for one interview, and then to complete some questionnaires at home every day for 30 days. If you are a woman 19 years of age or older, have had low back pain for at least six months, experience back pain on a daily basis, have a spouse or partner living with you, and would be willing to invest approximately 10 minutes a day for 30 days, please call 987-3574 for more information. All information will be kept strictly confidential.

Garden Hours
Nitobe Memorial Garden. Botanical Garden and the Shop-in-the-Garden are open 10am-6pm daily (including weekends) effective Mar. 9-Oct. 13, 1996. Call 822-9666 (gardens). 822-4529 (shop).

Guided Tours of Botanical Garden
By Friends of the Garden. Every Wednesday and Saturday. 1pm. until October 13, 1996. Free with admission. Call 822-9666.

English Language Institute Homestay. English-speaking families are needed to host international students participating in ELI programs for periods of two to six weeks. Remuneration is \$22/night. Call 822-1537.



Stephen Forgacs photo

Super Scholars

Seven UBC students were recognized for their outstanding academic achievements Feb. 29 with the presentation of Special Corporate Awards for Canada Scholars. Sponsored by Canadian corporations, the awards recognize the importance of science, engineering and technology to Canada's future economic growth and industrial competitiveness. Pictured above are (front row, l-r) Stelios Azoudis, Merck Frosst Canada Inc.; student award winners: Julie Lee, Pharmacology and Therapeutics; Mark Wolters, Metals and Materials Engineering; Nicole Giese, Bio-Resource Engineering; Tara Christie, Geological Engineering; Elham Fasihy, Pharmacology and Therapeutics, Kwok-Yu Ng, Biochemistry; and Lynda Mae Duncan, Biochemistry; (back row, l-r) Lori Gau, Glaxo Welcome Inc; Prof. Casey van Breemen, head, Dept. of Pharmacology and Therapeutics; Prof. George Mackie, head, Dept. of Biochemistry; Web Teetzel, Dupont Canada Inc.; Frank Thompson, MDS Health Group Ltd.; Prof. Ian Gartshore, assoc. dean, Applied Science; Bernard Bressler, vice-president, Research; Prof. Alastair Sinclair, Geological Engineering; Prof. David Holm, assoc. dean, Science.

REBEL WITH A CAUSE.

A retired tree surgeon spends time crafting wooden toys. Every Tuesday and Wednesday he visits a local children's hospital and hands them out to sick kids. This event is part of a movement that's helping change the world. One simple act at a time.



IMAGINE THE DIFFERENCE YOU COULD MAKE WITH YOUR ACTS OF GIVING AND VOLUNTEERING.



THE UNIVERSITY OF BRITISH COLUMBIA

CAMPUS PLANNING AND DEVELOPMENT
REVIEW COMMITTEE REPORT — JUNE 1995

THE UNIVERSITY OF BRITISH COLUMBIA

TO: Members of the Campus Planning and Development Review Committee

FROM: A. B. Gellatly, Vice-President
Administration and Finance

RE: **REVIEW OF THE CAMPUS PLANNING AND DEVELOPMENT DEPARTMENT**

I have appointed a committee to review the Campus Planning and Development Department with the Membership and Terms of Reference as noted below:

BACKGROUND:

During 1988 the Department of Physical Planning and Development (later renamed Campus Planning & Development) was created. The unit began as a collection of three former groups: two distinct units headed by directors, Facilities Planning and Design & Construction; and the Space Management unit headed by a manager who formerly reported to the Director of Budget and Planning. To lead the amalgamated group, a new director was brought to campus in September 1988 bringing the total staff complement at that time to 26.9 FTE's funded from both General Purpose Operating and Capital Budget sources.

Between 1988 and 1994, CP&D has grown, changed, and adjusted as it was positioned and repositioned to fulfill its mandate. Growth and change activities, as well as procedures and processes development activities, have been occurring simultaneously with implementation of an enormous program of physical planning and development. In the regard, capital cash flow between 1988/04/01 and 1994/03/31 has been approximately \$320,000,000. In addition, as at 1994/03/31, the anticipated cost of capital projects in the planning stage was over \$200,000,000.

The Department has four distinct functions in its mandate. These are: Campus Planning, which involves strategic and long range planning of the campus; Capital Project Management which involves both major and minor capital projects; Regulatory Services which involve procedures, permits and inspections of capital projects; Support Services which involves financial controls, infrastructure and building records.

MEMBERSHIP

- Dr. Brian Tinker, (Chair) former Vice-President, University of Calgary, Saskatchewan and Regina
- Dr. Donald G. Paterson, Associate Dean, Faculty of Arts
- Dr. Axel Meisen, Dean, Applied Science
- Mr. Sandy Hirshen, Professor, Director of Architecture
- Dr. David Measday, Associate Dean, Faculty of Science
- Ms. Mary Risebrough, Director, Department of Housing and Conferences
- Mr. Stephen Swant, Director, Capital and Space Planning, University of Washington

TERMS OF REFERENCE

The Review Committee's mandate includes, but is not limited to, the following:

1. To review the mandate, structure and operations, including staffing and budgeting of the Department of Campus Planning and Development.
2. To evaluate the overall level of effectiveness and accountability.
3. Identify any opportunities the Committee perceives for improving and changing CP&D's relations with both internal units such as Plant Operations, Financial Services, External Affairs, Telecommunications and external organizations such as the Ministry of Skills, Training and Job Creation, GVRD and the UEL.

The evaluation should include comparison with similar departments at comparable universities in Canada and the United States.

1. Executive Summary and Introduction

This Committee's Terms of Reference directed it to the following tasks:

- to review the mandate, structure, and operations, including staffing and budgeting, of the Department of Campus Planning and Development.
- to evaluate the overall level of effectiveness and accountability.
- to identify opportunities for improvement.

The functions performed by the Department are a necessary part of the support structure of a large, research-intensive university. We found no glaring omissions or redundancies.

We found that the mandate of the Department was not well known to, or if known, not respected by, many of the participants in the various processes associated with the management of UBC's capital projects. As a result there is considerable frustration within the Department and dissatisfaction with its performance outside.

The University was not well prepared for the major capital construction activity now underway. The development management function in particular was significantly under-staffed.

Overall the Department is adequately staffed. Re-design of some processes and procedures can free resources to deal with under-staffing in certain areas.

There are major communication problems to, from, and within the Department. The report contains several recommendations in this regard and we urge the Vice-President, Administration and Finance and the Director to address them promptly.

The administration of minor capital projects is the cause for much frustration and dissatisfaction with the performance of the Department. A complete over-haul of the process is recommended.

While this report concentrates on weaknesses, the Committee found much that is

positive in its review of the Department. The staff are generally well regarded, both personally and professionally, particularly by their professional peers outside the University. There have been major changes in the past 7 years or so and the task of managing the scale and scope of the University's capital program over that period in the midst of such change should not be underestimated. On balance the Department has done a commendable job and with improved communications, particularly with its "clients", it can do better.

Introduction

In March 1994 Dr. J. Stefan Dupré of the University of Toronto undertook a review of the *Administrative Organization and Processes* at the University of British Columbia. In his report Dr. Dupré called attention to the "abnormally high level of energy devoted to the study and review of administrative units," and called for stabilization by a policy of cyclical reviews at regular intervals. In May 1994 the President's Advisory Committee on Process Improvement and Development approved a schedule of reviews of administrative units reporting to several of the Vice-Presidents. Those reporting to the Vice-President Administration and Finance to be reviewed in 1994-95 were Campus Planning and Development and Plant Operations.

In October 1994 Dr. A. Bruce Gellatly, Vice-President Administration and Finance appointed this Committee to review the operation of the Campus Planning and Development Department. The composition of, and terms of reference for the committee are contained in a memo from the Vice-President dated November 3, 1994 and attached as Appendix 1.

The Committee held its first meeting on Nov. 14, 1994 and subsequently met on Jan. 13, 27, Feb. 16, 17, Mar. 30, 31, and Apr. 25. In addition several members attended an informal meeting with members of the Department on December 16.

In order to obtain as wide a range of views as possible notices were placed in UBC Reports, Campus Times, and The Graduate. A number of individuals known to have an interest in, or detailed working contact with the department were approached directly. This list included contractors, architects, and engineers engaged on UBC capital projects in the past several years. Individual memos were sent to all UBC Heads of Units. As a result of these initiatives 50 written submissions were received and committee interviews were held with 24. Some individuals were unavailable to meet with the full committee and the Chairman, with the consent of the Committee, met privately with these.

Two of the members of the Committee are from outside UBC and hence bring with them some knowledge of the way in which the responsibilities of the Campus Planning and Development Department (henceforth CP&D) are handled at other institutions. In addition, specific information was solicited from The University of Victoria, Simon Fraser University, The University of Alberta, and the University of Saskatchewan.

A few comments about the structure of this report are in order. The Committee chose not to follow precisely the internal organization of the Department in this report, primarily because the interactions are too intricate to make that separation easy or meaningful. Rather, the Committee has chosen to organize its comments around the principal functions or areas of responsibility in which the Department is involved. This constitutes the body of the report contained in Section 3. Section 2 consists of a self-assessment which the committee requested of Mr. Tim Miner, Director of the Department. This self-study also contains organization charts which describe the internal organization of the Department as well as its placement within the organization structure of UBC.

Section 4 of the report is a review of the resources of the Department, including where possible, comparison with the resources available for similar functions at other institutions.

Section 5 is a summary of the recommendations which are to be found distributed through Sections 3 and 4. The reader is cautioned to resist the temptation to concentrate on this section, or even to read it first. It is important that the recommendations be considered in the context of the discussion from which they arose.

The Committee would like to thank all those who took the time to write to and/or meet with us. Their concern for the University and for this Department was evident and is greatly appreciated.

Finally, the Committee, and especially the Chairman, would like to thank Dianne Longson of Dr. Gellatly's office who handled much of the Committee's correspondence and organizational details with efficiency and good humor.

2. Campus Planning & Development Unit Review 1994

"The popular image of a government agency is that of a large bureaucratic machine endlessly processing papers, making decisions, and providing services mandated by legislative bodies. Behind the popular image, however, are many highly educated and professional people, working together in departments doing their best to provide important public services. The context and styles of public sector work are much different than the private sector. The environment is more complex, with legislative and executive bodies at all levels constantly issuing directives, the media and special interest groups monitoring and reacting to every initiative, and budgets under unremitting pressure. Still, there is plenty of scope for visionary leadership in the public sector - to leave their mark not just as competent administrators but as responsible visionary leaders."

- Burt Nanus, *Visionary Leadership*

Introduction

In many ways Campus Planning & Development and the staff within the department can be likened to the "Government Agency" and the "Professional People" noted in the foregoing quotation. The environment within which the department functions is very complex and the staff work extremely hard at providing services necessary to the University and the larger community. As the legislative, regulatory and operational milieu of the University changes, the scope for visionary leadership relative to physical evolution of the Campus, is enhanced. As that same milieu becomes more stringent, the need for visionary leadership becomes more necessary.

Institutional, Community and Legislative Framework

UBC is not only a large public sector corporation undertaking a variety of Aca-



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demical and Educational endeavors but is also a sophisticated, mid-sized city or municipality. Close to forty thousand students, faculty and staff spend time daily on this campus. As well, there are thousands of periodic continuing education students to our academic facilities and visitors to our cultural and other facilities. The University provides its own infrastructure systems including roads, underground piping, landscaped areas, sewers, power transmission grid, steam production and transmission facilities, telecommunications switching and transmission system. The University owns and operates approximately 500 buildings from small wood frame structures to large, highly serviced laboratory buildings.

Physically, the UBC Campus is very large and, in terms of facilities placement, could be called sprawling. Development in the 1960s, 1970s and early 1980s appears to have been somewhat uncontrolled. "Repairs" to that development are now taking place by way of well controlled planning and implementation of new projects. As a result of the campus size a significant infrastructure of roads, and services exists in various stages of decay. The buildings of UBC, with a few exceptions, are mainly nondescript and of inexpensive construction (systems, materials). They are mostly of an age and level of repair which puts them in chronic need of attention, and hence funds. The sum total of problems embodied in the campus sprawl, the decaying infrastructure and the aging buildings will require funding in the hundreds of millions of dollars to address and cure.

Among other factors, the existing culture of UBC appears to have been influenced strongly by the pre-1983 reporting structure whereby Vice-Presidents, Deans, plus a host of Presidents Advisory Committees and others reported directly to the President - a system which seems to have seriously inhibited the open flow of information and substantially augmented competitiveness among different parts of the University. This early reporting system may have contributed also to development of the very wide gulf in understanding and appreciation which persists between academic and non-academic entities (and consequently individuals) of this University; a situation which seriously impairs team building. While I believe competitiveness remains strong, even severe, among campus units, the reporting structure has been substantially revised resulting in significant improvements in the area of information flow and in apparent understanding and cooperation among academic units. The culture of UBC has yet to mature sufficiently, however, to foster similar understanding and generate bridge building between academic and non-academic units. Until a final state of mutual appreciation and of cooperation is reached (until a collegial atmosphere is achieved), it is likely that underachievement rather than overachievement may remain the UBC norm in its service sector. Surely, underachievement in this sector must unfavourably impact the main enterprise also.

Legislatively, UBC exists in an unorganized territory rather than within a regularly constituted municipality and, as a result, the Municipal Act has not been applied on campus. Over the years the University has operated entirely under the University Act and has evolved as its own Authority Having Jurisdiction so far as physical planning and development is concerned. In the community sense, however, the university campus has remained devoid of service amenities common to areas of similar population density. Recently, with aggressive and diverse building development on University land, community matters have surfaced and jurisdictional and procedural questions have been raised pertaining to planning and development on the campus. Discussions at various levels within and beyond UBC are ongoing and relatively early resolution of some matters is expected. Over the medium and longer term, therefore, profound changes to the status of the UBC campus area (as a quasi-municipality vs. an institution) are distinctly possible.

UBC operates under the University Act and, along with all Universities and colleges in British Columbia, responds to Government via the Ministry of Skills, Training and Labour. On behalf of the University, Campus Planning & Development relates to the Ministry via the Post Secondary Education Division, Facilities Branch. All matters of campus planning, facilities inventory, major and minor capital programs, project implementation procedures and the like, are managed on behalf of the Ministry by the Facilities Branch. Relative to University buildings (physical space), either existing or proposed, there are many formalized reporting procedures and specific, detailed project development regulations mandated by the Ministry. The particular regulations entitled University, College and Institute Capital Projects Reference Manual impose a significant burden on the institution and this Department. CP&D staff are in regular, formal and informal contact with Branch staff regarding these matters.

The Position of CP&D within the Foregoing Framework

Generous major and minor capital funding from the provincial government coupled with the incredible success of UBC's World of Opportunity Campaign has thrust the University into very significant planning and capital construction activity. Total capital cash flow in the six year period between 1988 04 01 and 1994 03 31 has been approximately \$320 million. As of 1994 03 31 there were five major and many minor projects in the construction stage with unspent cash flow approaching \$100 million. In addition, as of 1994 03 31 there were projects in the active planning or immediate pre-tender stages carrying unspent values in excess of \$300 million. Proposed projects, not yet in active planning, totaling another \$200 million will be well underway with some completed before the year 2000.

Because UBC does not respond to the Municipal Act nor operate within a constituted municipality, Campus Planning & Development is expected to work under the broadest possible parameters. Consequently the department performs functions attributable to, or needed by, Municipal/Utility authorities, Owners/Developers as well as Occupants/Users. Municipal/Utility activities include: (1) planning and development control (master planning, public processes, development permits, code inspections, land surveys); (2) planning and constructing municipal infrastructure (roads, walks, lighting, sewer, storm drainage, geological controls); (3) utility distribution (power, gas, water, steam, communications). Owner/Developer activities include: (1) Upgrading habitable buildings (building audits, code compliance, WCB and life safety, property protection, building envelopes, building systems); (2) establishing and administering standards and guidelines (space, design, materials, systems); (3) project management for new buildings (control, coordination). Occupant/User activities include: (1) space needs assessment (functional planning and analysis, facility programming); (2) professional services and coordination (project planning and budgeting, design and documentation, implementation, furnishing acquisition, occupancy coordination). At a point in 1993 the department was spending approximately 30% of its time on municipal/utility functions, 40% on owner/developer functions and 30%

on Occupant/user functions.

Relative to the physical status of existing campus facilities, CP&D administers a Ministry program of budgeting which is in place to address the backlog of deficiencies (deteriorated buildings and decayed infrastructure). This program is relatively new and quite small compared to the enormous number and value of building and infrastructure upgrades which have been awaiting attention. The Department has been attending to crises items only while attempting to establish longer range, methodical programs complete with projected cost implications; the latter being necessary to demonstrate internally and to the Ministry the dimensions of an adequate funding program for continuous facilities upgrading. To date the Department's time and dollar priorities have been largely devoted to the crises items.

Being a somewhat new Department, both in terms of its comprehensive nature and in terms of its organization and staffing (three quarters of the staff have been employed by UBC for less than five years), CP&D has been working primarily within itself to establish its teams and to create, upgrade and exercise its processes. Also, to perpetuate the physical campus in support of the academic and research enterprise that is the University, the Department has been itemizing and proceeding with as much as possible of the needed planning and implementation work. These activities have more than exhausted the Department's resources thereby not allowing for adequate attempts at cultural bridge-building. The gulf between UBC's academic and non-academic entities has not been narrowed by Department thrusts and, indeed, may have broadened as a result of the significant level of facilities development activity currently taking place on the campus.

In order to safeguard the University's future development options, CP&D has seen as one of its duties the need to position the University within the region at least in terms of regulatory controls. With the Director's encouragement the University Planner established an unofficial forum for exchange of development activity information among UBC, its neighbours and the various agencies providing services thereto. Many useful discussions took place until the forum was suspended while UBC worked on its Public Process. The Director caused the University to adopt the current British Columbia Building Code and has established a functioning regulatory agency (akin to any provincial municipality) and a regulatory appeals committee to administer, enforce and mediate code matters. While most inter-jurisdictional and agency discussions are halted, the processes and procedures associated with the regulatory thrusts have been developing over the past two years.

In terms of Ministerial regulations, the Department has been vocal but unsuccessful to date, in pursuing more autonomy for the University. Currently another Ministry is exploring alternatives in the area of processes and practices extant in the public sector which effect planning and delivery of capital projects. The Department has had good input into this process and, for the first time in six years, is optimistic enough to believe that change in Government regulations can be brought about.

Current Mandate/Mission Statement

The earliest University-generated statement which suggest departmental mandate is noted on Page 49 of the University's Mission document, "Second to None", dated June 1989.

"The Department of Campus Planning and Development will be responsible for the growth and change of the physical environment of the university." Physical facility development activity on campus involves 300-400 projects per year, varying in cost from a few thousand dollars to major new facilities, such as the \$16 million Chemistry-Physics building. The department provides liaison with the architect, acts as manager of construction after the contract has been awarded and bears the responsibility for ensuring conformity with national and provincial codes and regulations.

The following quotations were generated by the department and were last put forward in the 1992/93 Budget Narrative to indicate the comprehensive nature of departmental activity.

(1) *"As noted in previous budget narratives UBC is not only a large corporation undertaking a variety of Academic and Educational endeavors but is also a sophisticated, mid-sized city. The University owns and manages its own infrastructure systems including roads, sewers, power transmission grid, steam production and transmission system. As well the University owns and operates approximately 500 buildings on the Point Grey campus from small wood frame structures to large, highly serviced laboratory facilities."*

(2) *"Whereas the Department of Plant Operations operates and maintains the status quo of campus facilities, Campus Planning and Development focuses the planning, design and construction effort required to extend, and/or alter campus facilities. A unit of this Department also acts as "authority having jurisdiction" to ensure that new projects as well as all changes and additions to existing campus buildings and systems conform to applicable codes and regulations thus ensuring a safe environment within the University. The on-going functions of long range planning, space management and the keeping of complete and accurate facilities records round out the major responsibilities of this Department."*

The following is a more succinct statement which flows from the original passage included in "Second to None" and the quotations put forward in 1992:

Supporting and complementing the vision set out in the 1989 Mission document "Second to None" and recognizing the strategic position of UBC in the Region, Province and World; Campus Planning & Development aims to provide creative leadership and teamwork to meet the University's need for specialized professional and technical services in the areas of comprehensive Physical Planning, Facilities Resources and Regulations, Major and Minor Project Development

Organization, Evolution since 1988

During 1988 the office of Physical Planning & Development (later renamed Campus Planning & Development) was created. The office began as a collection of three former groups: two distinct units headed by directors (Facilities Planning, Design and Construction) plus a Space Management unit headed by a manager who formerly reported to the Director of Budget and Planning. These three units were previously housed in distinctly separate quarters. To lead the amalgamated group, a new Director was brought to campus in September 1988 bringing the total staff complement at that time to 26.9 FTE's funded from both General Purpose Operating and Capital Budget sources.

Between 1988 and 1994 CP&D has grown, changed, and adjusted as it was



positioned and repositioned to fulfill its mandate. The Director and other managers within the unit have found it necessary to "return to basics" and to upgrade or create from scratch most procedures, processes and tasks needed in order to address the mandate. The growth and change activities, as well as the procedure and process development activities, have been occurring simultaneously with implementing the enormous program of physical planning and development previously mentioned. Departmental structuring and process development, although continuing, are slowing in intensity while, in terms of the last six or next six years, project implementation is probably at its most active today.

Following its basic structuring, the department has been adjusted several times since 1988. These adjustments have included formation and deletion of major divisions and movement of units within them. In 1988 following the new director's arrival Campus Planning & Development was structured into three basic divisions. Initially three senior positions were created: University Planner responsible for Campus Planning and Space Management; University Architect responsible for management of major capital projects; University Engineer responsible for campus infrastructure including minor capital projects and facility records. Initially the Director also operated as University Architect.

Over the six years, units have been created and qualified people have been engaged to meet specific needs such as financial budgeting and control, accounting and building code enforcement while others have been manipulated to better use the personnel involved. Recently, the Engineering group of five individuals, was transferred out of the Department and into Plant Operations. This was seen as a move consistent with the best long-term interests of the University.

Today the Department has two major divisions headed by Associate Directors: the Resources and Regulations Section which encompasses our Facility Records group including CAD records, a Space Inventory group, Computer/ Network functionaries, Development Permit people and the Code Enforcement inspectors; and the Project Development Section which includes management staff for all major and minor projects, design staff and construction coordination staff associated with minor projects, an urban designer and a person involved in furnishings provision for specific projects. Staff responding directly to the Director include the University Planner, the Manager of Space Administration, the Engineering Manager and the Manager of Administration and Finance. An Executive Assistant, Information Officer, Cost Scheduling Analyst and Secretary are the Directors immediate support team. A Strategic Physical Planning Group was recently created to convene as required to enhance team aspects of planning and assist in reducing response times for resolution of specific issues. It includes a number of individuals from within the department and is coordinated on behalf of the Director by his Executive Assistant.

Campus Planning & Development in Comparison

In order to provide a short presentation to the UBC Senate Budget Committee, a historical review of the Department's development since the tenure of the present Director was undertaken during early 1993. As well, a comparison of UBC's facilities and functions with other major North American universities was undertaken. The material was recorded by institutional size, function and staff level within the data framework from the Association of Physical Plant Administrators (APPA), an association of higher education facilities officers. Since the APPA information was silent on municipal matters and light on developer data, this department was also loosely compared to the Municipality (City) of North Vancouver and to the British Columbia Building Corporation for discussion purposes.

Compared to fourteen other universities, according to APPA information compiled on a staff per unit area basis, in 1993 UBC had the lowest facilities staff level. This was down from its much higher 1969 status, which compared closely to Waterloo's 1993 situation, as having the second highest facilities staff level of the fifteen universities. Also, compared locally to Simon Fraser University and the University of Victoria, UBC had a much lower facilities staff/ building area ratio of the other universities.

Compared to the City of North Vancouver, with a population of 36,000, UBC at approximately 40,000 population is about 1/3 the area of the City but in 1992 UBC was processing a greater building permit dollar value with 1/3 the number of building permit staff. In addition, while UBC has only 1/3 the extent of North Vancouver roads, UBC administers electrical, gas and steam distribution systems for which that city is not responsible. UBC's civil engineering staff is considerably smaller than that of North Vancouver.

Compared to BCBC which had a 1992 project value of \$400 million with 13 project managers, UBC had a 1992 project value of \$270 million with 5 project managers: approximately 2/3 the project value with 1/3 the management staff. Relative to Project Management Institute (PMI) standards, the UBC development managers carried more projects per person and, consequently, the number of hours available to be apportioned to each project was below the industry standard, sometimes, by as much as half. Finally, UBC's allowable project management charges were half of PMI Standards and less than half of the actuals of Public Works Canada, BCBC, the University of Alberta and the University of Washington and were just below Syncrude actuals.

Strengths and Weaknesses

The Director has been fortunate to retain and to attract well experienced, professionally and technically trained women and men, including some very visionary and creative individuals, to assume core staff and leadership positions in the Department. Close to half of the staff are graduate and/or professionally trained as engineers, architects, planners, accountants, analysts, interior designers, and geographers. A further third of the staff are trained and/or certified technicians. Most of the remaining staff have completed one or more diploma courses.

Since the Department's inception in 1988 as basically a collection of individuals, the organization has been coming together well into teams which are bonding and maturing with time. In staff numbers we have grown from the original 26.9 FTE's in 1988 (of whom approximately 10 remain) to in excess of fifty people today. Establishing teams within the Department and the total Department as a team, was an early vision which is well along toward reality. This teamwork approach to our challenge is now becoming a strength.

Although the process of establishing or updating processes continues, each completed thrust is another strength to the Department in meeting its mandate. As highlighted below much rationalization of Department functions has taken place since 1988.

Policy and Procedures:

1) established a Policies and Procedures Manual; 2) developed a system of progressive project approvals (Project Committees, Space Committee, Board of Governors approvals); 3) revised and updated the Technical Design Guidelines; 4) initiated a set of project Environmental Design Guidelines; 5) computerized and networked the office, connecting it to the campus telecommunications "backbone" and upgraded the staff computer literacy level from practically zero; 6) enhanced public safety by conducting campus-wide asbestos and seismic reviews and developing campus Safety and Access Audits to assist in prioritizing project expenditures and rationalizing risk management on campus.

Planning:

1) established a planning department; 2) hired a University Planner; 3) initiated the Main Campus Plan adopted by the University in 1992; 4) continued work on the Campus Plan and implemented its policies by developing more detailed plans such as the Campus Safety Plan, and the Urban Systems Plan to upgrade campus facilities, plus many faculty/ department plans 5) compiled the Greater Campus Discussion Paper; 6) submitted comprehensive response to the Spaxman Report 7) convened a Strategic Planning group to comprehensively deal with physical planning issues.

Space Management and Planning:

1) established a Space Inventory and Analysis System; 2) created a consistent format for responding to the provincial government; 3) regularized Facility Programming procedures and document format.

Project Development:

1) enhanced and developed a format for the Capital Plan submission to the provincial government; 2) established and enhanced a Project Status reporting format to ease the project review process by the President, VP's and BOG; 3) developed and improved Minor Capital program administration format with a project classification system to facilitate project evaluation; 4) established a priority-setting matrix for campus physical access projects; 5) developed new forms of consultant agreement and construction contract specifically suited to the University; 6) re stabilized Prime consultant appointment procedures, including credentials files; 7) created Development Managers and established current project management process; 8) reorganized and reconstituted the Design Office; 9) established a Furnishings Manager position 10) established an Urban Designer position

Regulations and Standards:

1) recommended to the University in 1991 adoption the BC Building Code; 2) appointed a Chief Inspector for the campus to ensure code compliance; 3) established a development permit system to identify and review complex development issues; 4) appointed an Associate Director, Regulatory Services to oversee all of the above; 5) created a Regulatory Appeals Committee to ensure consideration and fairness in the Regulatory process; (6) introduced a Physical Access Advisor.

Resources:

1) hired a qualified architect/librarian to take charge of Facilities Records; 2) computerized records and drawings by digitizing building floorplans, for example, so that they can be read as required by various campus users such as Health, Safety and Environment, Plant Operations, the Fire Department, Telecommunications; 3) Upgraded personnel to improve wide ranging information systems and facility records to be used as the backbone of UBC's thrust into a Graphic Information System (GIS).

Financial Controls:

1) established a Financial Department; 2) hired a qualified Certified General Accountant; 3) established a Project Management Accounting, Reporting and Control System; 4) established full electronic linkage to the Financial Services Department; 5) engaged a cost/scheduling person to integrate and monitor costing and scheduling of all projects.

Campus Liaison:

1) hired an Information Officer to communicate CP&D's activities both within and outside the department; 2) assisted Plant Operations in its role as custodian of the existing physical facilities; 3) assisted Health, Safety and Environment in its role of enhancing the well-being of everyone on campus relative to physical facilities; 4) advised and assisted Financial Services Department in its role as asset manager in leasing UBC properties; 5) improved connections and liaison with other agencies, consultants, and planners.

To quote the University Planner, "We are laying track in front of a moving locomotive". His remark was made over four years ago and related to the fact that broad planning work (let alone finer, more detailed planning) was taking place almost simultaneously with project implementation work. Although a Main Campus Plan is now in place, many of the sub-set plans still are not, so, in many senses we are still just in front of the locomotive. Planning is proceeding frantically (as funding permits) but its incomplete nature is a great weakness to the Department and, I believe, to the University.

While we make much of the rationalization of functions that has occurred since 1988, many of our procedures, guidelines and documents continue to have flaws which require early attention. Some functions already visited require further adjustments. Each flawed function or one which requires further improvement is a weakness. The recent report of the internal auditor supports our need for ongoing improvement.

The enormous backlog of campus and building repair work combined with proportionally insignificant capital funding, while not a departmental weakness, is a systemic problem which forces an apparent weakness upon Campus Planning & Development. The department's inability to respond to difficulties and to correct facilities problems, both functions of available resources, establish an image of weakness which we are often unable to counteract. UBC appears to have a history of poorly funding its facility Departments, compared to the funding of similar departments at other institutions, which does not augur well for addressing this weakness.

Finally, the Director has built strength in the Department which is rooted in professional, technical, and organizational experience gained through successfully building and leading a similar team-styled department operating in an atmosphere of collegiality at another research university of near-equal size. Building on that strength the Director and his management group have concentrated prima-



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rily on working within the Department developing a functional facilities team and rationalizing its functions.

The Director and his management group have probably not been sufficiently aggressive and outward looking in explaining and advocating the role of the Department and in defending its position when that position is based on sound professional judgment within their area of competence. This is regarded as a weakness and is an area which must be addressed in the future.

3. Issues and Areas of Concern

Overview

It is difficult to find the correct words or phrases to describe the sub-divisions of this section of the report. In part they represent organizational units within CP&D and in part they are issues or areas of concern that emerged from the various written and oral information which the Committee received. The divisions which emerged from that consideration were:

- Mandate and Core Functions
- Planning
- Internal Relations
- External Relations
- Major Capital Projects
- Minor Capital Projects
- Regulatory Services and Records

3.1 Mandate and Core Functions

The origins of the Department in 1988 and its evolution since then are described in Section 2. The core functions performed by the Department are similar in most respects to those performed in comparable departments in other universities.

They are:

- Campus and Master Planning
- Design, tendering, and project management for Minor Capital Projects: generally renovations to existing buildings costing less than \$1.5 million.
- Functional programming, design (and/or architect selection) and project management for Major Capital Projects.
- Space allocation and maintenance of building records
- Administration of a regulatory process to ensure compliance with appropriate building codes.

It is in this last respect that CP&D at UBC differs from comparable units in other institutions. The details of this arrangement and some of the ramifications of it are discussed in Section 3.7.

The mandate of the Department, as it appears in the University's mission statement published in June 1989 is quoted in Section 2. Also appearing in that section are some modifications and clarifications of that statement which the Department itself has advanced in several budget narratives since that time. As these clarifications have gone unchallenged the Department has operated on the basis that they represent the departmental mission. However, the mandate seems to be poorly understood, communicated, and supported within the University community. As will be discussed in more detail in subsequent sections many of the reported failures of CP&D to satisfactorily discharge its functions can be attributed in part to lack of resources, but primarily to a general misunderstanding of the Department's mandate and a lack of delegated authority, both to and within the Department.

There is no doubt that the University in general, and CP&D in particular, were ill prepared for the dramatic surge in major capital activity of recent years. Project management resources in particular were stretched beyond reason. Within the University there is a lack of clear understanding of the terms "owner", "client", and "user" as they apply to the construction of physical facilities. Clearly, the legal owner is the University and it must have an agent with the authority to represent the University's interests in dealings with architects, engineers, and contractors. In keeping with the "official" mandate, that agent is CP&D. In short, to the outside world the University is the client and CP&D is its agent. Within the University context, however, the facility's user or occupant, usually an academic faculty or department, often feels and acts like the owner and hence wants to be able to act like the client in relations with design and construction forces. This feeling of ownership is understandable, necessary, and desirable at the appropriate stages of the project development process. In order to accommodate it CP&D personnel need to regard "users" as their "clients" in the process. The need to consult widely in the programming and design phases of sophisticated academic facilities must be accommodated. However, there must be a point where consultation gives way to action in order to avoid costly delays in the detailed design and construction phases. More will be said about this in a subsequent section of this report.

The recent success of the University's public campaign for capital funds has added another dimension of complexity to the process. Naturally, major donors, or their representatives, expect a significant voice in certain planning and design decisions. If not handled with sensitivity the result can be a clash of priorities and expectations between internal users and external donors resulting in frustration and costly delays. The manifestation of this complex situation is often a badly managed project, which reflects poorly on the reputation of CP&D.

With respect to minor renovation projects, the relationship between these activities, the responsibility of CP&D, and routine repair and maintenance, the responsibility of Plant Operations, is poorly understood within the University community, and to some extent outside the University as well. The mandate of CP&D is clear on this point but it apparently has not been well communicated.

We have the following recommendations to make with respect to these matters.

R.1. The Senior Administration should revisit the mandate of CP&D and should clarify its intent with respect to the roles of owner/ client/ user in major projects and communicate its objectives and expectations to the broader community.

R.2. The Senior Administration should review and clarify the roles of the various capital advisory committees, such as the Senate Committee on Academic Building Needs and the President's Advisory Committee on Space Allocation.

R.3. CP&D should enhance its efforts to inform the University community about the consultative, planning, and construction processes. In particular,

the Director of CP&D should meet regularly with Vice-Presidents, Deans, and Department Chairs to exchange perceptions and expectations for the planning and development process.

The range of core functions performed by CP&D is appropriate for a "full service" capital planning and development activity. There are no glaring omissions or organizational redundancies. As noted in Section 3.5 however, there is occasional loss of continuity in the transition from planning to project implementation. This is partly the result of high work-loads within CP&D but also results from inadequate definition of roles and authority within the Department and lack of adherence to project parameters and the Campus Master Plan.

The Department suffers from a poor self-image. This is not surprising given the tone of some of the submissions to this Committee. Most were constructive but a few were highly inflammatory and sometimes based on profound ignorance of the role, function, and limitations of CP&D. As a result, morale within the Department is poor and members are inclined to "side" more with architects and contractors than with internal "users" when conflicts arise. Team building efforts are not fully understood and accepted by some resulting in a lack of clarity about the vision and philosophy of the Department and the roles and responsibilities of the respective units within it.

R.4. More definitive descriptions of the roles and responsibilities of the individual CP&D units should be established. Responsibilities for project "lead" throughout the development process should be clearly assigned; delegation of authority and responsibility for project execution and deviation from approved plans clarified, communicated, and supported at all levels in the University.

R.5. Staff development and training efforts should be increased to address team-building/commitment deficiencies, enhance morale, and improve management techniques.

R.6. The Director needs to devote more time to communication activities, primarily within the UBC community. Whether this is achieved by reducing the number of people reporting to the Director or delegating more authority to those who do, is a judgment best left to the incumbent and the appropriate member of the Senior Administration.

R.7. As a supplement to the proposed cyclical review of this and other administrative units we believe that CP&D, particularly at this point in its history, would benefit from the creation of an Advisory Board, composed of key Deans, Administrators, and Senior Officers to assist in on-going program review and to establish campus advocates for the Department's activities. The Board should meet no more than three or four times a year; should not attempt to "manage" the Department; and should not attempt to assume the roles of other participants in the decision process, such as the appropriate standing committee of the Board of Governors. The Advisory Board should be regarded as a temporary feature and should disband three years after its creation unless good cause can be shown for its continuation.

3.2 Planning Issues and Recommendations

The planning environment at UBC is unique in that the University is not located within the boundaries of any municipality and therefore functions entirely autonomously in planning matters. Other universities, even though exempt from municipal taxation and regulation by their governing statutes, often voluntarily subject themselves to municipal authority in planning and building code matters. This arrangement usually results in wide public participation in the planning process. Until recently UBC made all its planning decisions without the benefit of traditional planning processes.

However, UBC has a number of significant contacts with its neighboring communities, particularly the University Endowment Lands (UEL). The details of these arrangements are discussed in Section 3.4. In response to the demands of stakeholders surrounding UBC that they have a voice in the University's plans for the development of the South Campus the University and the Greater Vancouver Regional District (GVRD), in consultation with AWA Spaxman, have worked out a cooperative agreement to create an Official Community Plan. If this works for the resolution of South Campus issues it can become a model for future participatory planning.

In short, UBC's unusual jurisdictional arrangements have set a contentious tone for the massive planning effort now being carried out. Repairing the damage and moving on to a more productive cooperative arrangement will involve not only the technical skills of the University Planner, but also the attention and leadership of the Senior Administration.

The Main Campus Plan, developed by outside consultants in cooperation with the University Planner, involved an extensive consultation process that resulted in a "buy in" by most internal and external stakeholders. However, individual development managers, often with multiple project responsibilities, remain focused on their specific projects but not with the overall intent of the Plan and Guidelines. This narrow focus, reinforced by powerful user voices concerned primarily with functional internal spaces, gets transmitted to design consultants resulting in insufficient attention being paid to matters of urban design and landscape. Many organizations and municipalities make use of a Design Review Panel of respected professionals to review projects at an early stage and to act as an advocate for the urban design and landscape elements of projects.

R.8 The development process for major projects should be modified to include a powerful advocate for the Main Campus Plan and its urban design criteria throughout the design and construction process. A Design Review panel, along the lines of that of the City of Vancouver or the University of Washington would serve this function. Consideration should be given to establishing a specific budget allocation for urban design elements at the start of the project, in the same way that specific provision is often made elsewhere for the acquisition of appropriate works of art for new buildings.

Many of the problems attributed to the past planning process (or lack thereof) reflect the cyclical nature of planning and building on the campus. At present the massive infusion of capital funds preceded the creation of an effective organization to deal with the resulting planning and development demands. This highlights the need for creating institutional memory and continuity so that subsequent administrations can continue the planning through the cycles. Creating institutional memory will allow future administrations to revisit important planning decisions in the light of changing circumstances. The evolution of the South



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Campus Plan is a good example of this need.

R.9 The University should make the long-term commitment of funds necessary to support a core CP&D group capable of providing continuity and institutional planning memory. The University should continue to use a mix of staff and consultant expertise in the planning function, with an emphasis on the use of consultants to alleviate the current under-staffing. However, we believe that a modest increase in resources in support of the planning and functional programming activities is warranted.

3.3 Internal Relations

Members of the University community who responded to the invitation to submit comments were generally supportive of individual staff-members but recommended improvements in leadership, organization and processes. Most felt that the increase in the volume of work in recent years had overwhelmed the Department with the result that its ability to manage both major and minor capital projects had suffered. There is a perception of a lack of accountability to the community for budgets, timeliness of projects, and ultimately satisfaction of the needs of building users. These perceptions seem to have been reinforced by what one respondent called an "arrogant disregard for academic input."

Submissions were received from faculty and administrators who had been involved in 10 major capital projects and numerous minor renovations or expansions. There was a consensus about the need for a strong client-centred culture in the Department. The most frequent comments were that CP&D needs to: better understand the goals and requirements of their "clients" before the consultants are engaged and to support these building users' goals throughout the project, improve communication and consultation with project users, and also with other service departments involved with the completion of projects, such as Plant Operations, and Computing and Communications, be directly accountable for project budgets and performance by taking responsibility for cost over-runs and deficiencies, perhaps through a Departmental contingency fund, improve turnaround time for minor projects, improve the timeliness of charges to clients accounts. It was evident the CP&D's outreach to the university community, and recognition of UBC's unique culture, had not met the expectations of many. The result has been friction and stressed relations between CP&D and users, and low morale within CP&D. Many of the suggestions and recommendations for dealing with these problems are contained in the relevant sections of this report. There are, however, a few generic recommendations that can be offered at this point.

R.10 The University needs to clarify the authority, responsibility, and accountability of all participants in capital processes. These guide-lines should be made available to contractors and architects along with the designation of the Development Manager and the clear specification that this is the only person authorized to issue instructions on behalf of the owner. This latter role of CP&D staff also needs to be communicated widely on campus.

R.11. The work-load of development managers should be so arranged that they can devote full time to a specific major project as and when necessary. This will involve an appropriate balance of major and minor, complex and simple, projects.

R.12 While there was general support for the mandate of CP&D more visible leadership, clearer accountability, a service orientation, and increased efficiency were all seen as matters deserving of the attention of the Vice-President.

A particularly important internal link is that between CP&D and the academic plans of the University. This is especially important for the space planning function, an activity transferred from the the Budget and Planning Office to CP&D in 1988. The Committee gave careful consideration to whether that transfer should be reversed. We concluded that, on balance, the current arrangement is appropriate but that the existing links between Space Planning and the office of the Vice-President Academic and Provost need to be strengthened.

3.4 External Relations

In the course of discharging its mission the Campus Planning and Development Department is required to interact with a wide variety of individuals and organizations outside the formal structure of U.B.C. In a very real way the department is UBC to many.

In addition to the general call for submissions placed in several campus publications, individual requests were directed to architects, engineers, and contractors, who had been engaged on University projects in the past several years. A total of 50 responses were received and interviews were conducted with 24. The responses were generally positive with respect to the professionalism and dedication of CP&D staff. However, a number of problem areas were identified.

development managers given responsibility for too many projects, the decision-making process is seen to be slow, cumbersome, and politicized. The results are delays and cost increases. CP&D in general, and the project managers in particular, seem to lack the authority to properly expedite projects, the regulatory process is seen to be slow and inflexible. That said, most critics acknowledge the newness of this part of the process and seem to be willing to make allowances, the Main Campus Plan is generally well regarded. However to some observers not everyone in CP&D appears to have "bought in" to the plan, interpretations appear inconsistent, resulting in conflicts between the University Planner and development managers. Again, the result is seen to be delays and "looping" while differences are reconciled, communication among and between CP&D, Plant Operations, and Computing and Communications is seen to be less effective than it needs to be in some cases, inadequate documentation of University building standards is seen as a problem.

In spite of these criticisms the architects, engineers, and contractors, were generally supportive of the changes that had taken place in CP&D over the past 6 or 7 years. Most problems were attributed to growing pains associated with the reorganization of the department in the midst of a major construction boom.

Most universities enjoy a love/hate relationship with neighboring residential areas. UBC is certainly no exception and the situation is more complex than most for the following reasons: UBC is not subject to any municipal planning or regulatory authority as it is not located within the boundaries of any municipality. The implications of this are dealt with in more detail elsewhere in this report. The nearest residential neighbor, the University Endowment Lands (UEL) is also not part of any organized municipality, a status reconfirmed by the residents in a referendum on March 4, 1995. The area is administered directly by the provincial Department of Municipal Affairs. The sewer and water systems of UBC and UEL

are connected, and through this are connected to the utilities of the GVRD. Fire service is currently provided to UBC by UEL. At the technical level relations between UBC and UEL are reasonably satisfactory. The staff of the fire service expressed a willingness and desire to be more involved, as consultants on fire safety equipment and systems, during the design of new construction, renovations, and major repair work. However, it is understood that, during the summer of 1995 this service will be transferred to the City of Vancouver, with a significant reduction in staff level. It is likely, therefore, that UBC may not receive the level of preventive services in the future that it has enjoyed in the past.

We were told that in the past relations at the political/planning level had been far less satisfactory. In the eyes of its neighbors UBC has not been properly accountable for planning decisions (such as Hampton Place) which are of concern to them. The creation of a number of Presidential Advisory Committees over the past 5 years and the involvement of residents of the UEL in these committees has somewhat improved relations, even though some of these committees were seen as tokens of public involvement. The involvement of residents of the UEL in reviewing the draft of the Main Campus Plan was particularly appreciated. The agreement between UBC and the Greater Vancouver Regional District (GVRD) to develop an Official Community Plan is seen as a major positive step.

Because of its involvement in developing the Main Campus Plan, and the South Campus Plan, CP&D has become somewhat of a lightning rod for these community concerns and the Department has tended to receive criticism for matters that are, in some cases, sins of commission (or omission) of others.

In the past CP&D has had little formal involvement with the GVRD. The decision to develop an Official Community Plan is, as noted, seen as a major improvement in community relations. This project will, of necessity, involve the planning staff of CP&D in a highly sensitive political process. To be successful this process must involve senior University officers, with the role of CP&D limited to the more technical aspects.

Although the UBC Real Estate Corporation is wholly owned by UBC it operates at arms-length from CP&D and hence is being treated in this report as an external organization. The Real Estate Corporation was created to act as a private developer with respect to the University's plans to develop market housing and other quasi-commercial activities on parts of the campus, as well as to manage some of the University's off-campus real estate holdings. Its only formal interaction with CP&D has been with the Regulatory Services, with respect to permits for the Multi-Tenant facility. The nature of the relationship between the Real Estate Corporation and CP&D appears to be poorly understood by both the general and construction communities. The relative simplicity of its organizational structure allows the Real Estate Corporation to be more responsive and hence to appear more efficient and effective in dealings with contractors and consultants. To those who don't understand the structural differences between the University and the Real Estate Corporation CP&D suffers by comparison.

The UBC Alma Mater Society (AMS) is the principal organization representing both undergraduate and graduate students at UBC. Interactions with CP&D (and Plant Operations) are frequent in connection with renovations and maintenance of facilities operated by the AMS. Initially the reorganization of the functions performed by CP&D, particularly the introduction of a more formal permit process, was seen as an attack on the autonomy of the AMS. Previously, the AMS had enjoyed a relatively free hand in modifying its facilities. We were told that over the past two years relations have improved significantly as both CP&D and the AMS came to appreciate each other's position. Credit for this improvement should be shared by the leaders of both organizations.

Relations between CP&D and the Facilities Branch of the Department of Skills, Training and Labour of the Government of British Columbia appear to be quite satisfactory, at least from the perspective of the Government Department. In spite of the apparent formalism implied by the procedures out-lined in the "University, College and Institute Capital Projects Reference Manual" the Department is concerned mainly with having projects completed "on time and within budget". There is virtually no involvement of Government employees in the detailed management of specific projects. The staff of CP&D who interact with this branch of government seem to be well regarded both personally and professionally. There is some concern that CP&D may have been understaffed for the tasks which faced it in the past few years.

In summary, observers in the construction business view CP&D as under-staffed and lacking the necessary authority for effective project management. This same view, at least with respect to resources, is shared by the Facilities Branch. The relationship between CP&D and Plant Operations is unclear to most external (and many internal) observers. CP&D staff generally under-estimate the public relations value and importance of their work.

R.13. A senior University official, preferably at the level of a Vice-President, should assume the lead role in planning discussions with the surrounding communities, with technical support from CP&D.

R.14. The Director should ensure that he and his staff develop a heightened awareness of the public relations significance of their work. They are representatives of the University, with a primary responsibility to represent the position of the University.

3.5 Major Capital Projects

Based on the submissions received, and the experience of individual members of this Review Committee, the following issues merit consideration with respect to the way in which the University plans and manages major capital projects: performance of CP&D with respect to meeting budget and time schedules, whether UBC projects are more expensive than those in the private sector, and if so, why, appropriateness of the process for the selection of prime consultants for major projects, appropriate size, composition and role of project committees, consistent with established lines of authority and responsibility, role of the Planning and Property Committee of the Board of Governors, appropriate level of internal development management capacity and the use of consultants, communication problems between CP&D and users and within CP&D.

The "mantra" of development managers is generally regarded as "on time and under budget". It is the perception of many of our internal respondents that the record of CP&D in this regard is poor. In spite of this we received documents which tended to show rather good performance with respect to both time and cost. Part of the discrepancy can be attributed to a lack of agreement between



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completion dates seen as feasible by CP&D and those wished for or mandated by others. It appears that some completion dates were established without sufficient consideration of their practicality. Cost control performance is also difficult to track. Project budgets get changed for many reasons during the life of a project and without a detailed record it is difficult to know which "budget" is the appropriate target for the measurement of management performance. The overall impression left, however, is that CP&D failed to perform. Whether the failure is one of performance against a reasonable objective or lack of sound professional judgment in accepting an unreasonable objective is not material. The responsibility for project management rests with CP&D. We did not seek, nor were we offered, evidence to show that UBC construction costs were higher than those of construction counter-parts elsewhere. Indeed, such evidence would be virtually impossible to obtain since University buildings tend to be highly specialized and not replicated elsewhere. Nevertheless, the perception that UBC building costs are abnormally high is pervasive. If those bidding on contracts think that UBC is a difficult client it is likely that this will be reflected in their bids. The reasons most often cited for believing that UBC costs are high are: high level of re-design changes and construction change orders, cost of delays because of complex and protracted consultation processes and lack of authoritative decision-making, CP&D bureaucratic regulatory procedures and inflexibility in decisions on code interpretations.

There are measures which CP&D could initiate to make the process of building at UBC appear less formidable to the construction community. We believe that the problem is not that there are more bureaucratic procedures at UBC but, rather, that all are UBC procedures whereas in the private sector they would be distributed among client, code consultant, municipal and possibly provincial planning authorities. Because the various components of CP&D are all close to the projects there is scope for interference as projects progress through the planning and building phases. It is this, and not the procedures per se which we believe are the problem.

The process by which prime consultants are selected for major projects was also viewed as problematic by some. The culture of universities is such that members of the community expect extensive consultation in decisions that affect them. Carried to an extreme consultation can become obstruction, with attendant cost over-runs and time delays. We have some recommendations below on the general topic of appropriate user involvement in various phases of a major capital project, but at this point suffice it to say that we are of the opinion that the current practice for architect selection at UBC strikes a reasonable balance between a committee so small that key stakeholders are disenfranchised and one so large that meetings become unwieldy and counter-productive and the maintenance of confidentiality is impossible. We therefore do not recommend any change in the process by which prime consultants are chosen.

Many respondents addressed the issues of size and composition of project committees. Lack of clarity between the roles and responsibilities of these committees and those of CP&D is a major cause of the frustration and dissatisfaction that has accompanied many of UBC's recent major projects. The project committee is generally co-chaired by the CP&D Development Manager and the Dean or designate (or representative of other user). All user groups are represented, as are the Development Office and donors, as appropriate. The committee reports to CP&D but the various representatives also serve as communication links to their constituencies. The same committee has normally remained in place for all phases of a project, from programming, through schematic and detailed design, to construction and commissioning. We heard evidence that not all members of these committees were equally committed to the task, nor indeed knowledgeable about their role and responsibilities. We believe that projects benefit from broad involvement in the early stages but that there comes a time when the need to "get on with the job" dictates a smaller group, able to meet and reach decisions quickly.

We offer the following recommendations with regard to project committees:

R.15. The role of members of project committees should be clarified. Each member should receive not only a letter of appointment from the Vice-President, but also instructions outlining the role, responsibilities, and authority of the committee. It should be made clear to whom the member is accountable for their actions or inactions.

R.16. For the programming and schematic design phases of a major project we believe that the current practice of seeking broad user input is appropriate. However, as a project moves to the detailed design and construction phases the size of the committee should be substantially reduced and it should be composed of individuals with the time and commitment to meet on short notice and the authority and responsibility to make decisions in a timely way. As the project evolves the necessary technical support will change from functional programming to development management. Overlap should be adequate to ensure continuity of concept.

The Board of Governors exercises its oversight of CP&D through its Planning and Property Committee. The Board should, as presently is the case, receive reports on projects from this committee. The Board approves various stages of projects: Initial project/program approval.

Initiation of design, including appointment of the prime consultant and approval of the budget. Design development approval and initiation of working drawings. Award of construction contract.

In exercising its functions we believe the Board would benefit from more detailed information than that which was provided to us. We think it important that the Board (or its Committee) approved the original budget and schedule for a project and significant change in either. It is the responsibility of CP&D to anticipate the need for such changes, justify them, and seek appropriate approval.

Boards of Governors often contain individuals highly experienced in certain business affairs. In such instances some Boards have occasionally been tempted to engage in "micro-management". We understand that this has not been the style of the UBC Board and we agree that such a policy is wise. The University's expertise in construction management should not depend on the current composition of the Board. When Board members engage in "micro-management" the ability of the Board to exercise appropriate oversight and to hold the managers accountable is compromised.

This leads us to the following recommendations:

R.17 As part of its accountability to the Board, Senior Administration, and the

University community CP&D should develop performance criteria based on a regular reporting format that includes, as a minimum, the following information: original schedule and approved changes; original budget and approved changes; reasons for the changes; and origin of the request for the change.

R.18 Newly-appointed members of the Planning and Property Committee should receive an orientation to the processes and of the University, particularly with respect to the Campus Plan and the relative roles of the Board, its Committee, the Project Committee, and CP&D.

The effectiveness of CP&D's development management capabilities received much comment from those who responded to the Review Committee. The following comments should not be regarded as criticism of individual managers. Rather, they are a reflection of the circumstances that have prevailed during the recent "construction boom" on campus. In general, the development managers are well regarded for their competence and hard work. However, there is no doubt that the University was not ready to handle the sudden growth in the volume of new construction with the result that individual development managers were stretched too thinly and were therefore not able to exercise close supervision of certain projects. The recent use of off-campus consultants as development managers has improved the situation considerably. The cost of project management is a legitimate charge to a project budget and we believe it is false economy to attempt to economize on this element. As the volume of new construction in future is likely to consist of peaks and valleys we suggest that the University will be best served by the retention of a relatively small cadre of highly skilled development managers, supplemented as necessary by consultants. As noted earlier (R.11) the workload of all development managers, staff or contract, should contemplate times when full time attention to a particular project is necessary.

We also believe that effective project management is currently being compromised by the lack of a financial reporting system which provides managers and users with clear, up-to-date information of expenditures and commitments. We were told that development managers found it necessary to maintain their own private accounting system in order to be able to exercise effective financial control of their projects.

R.19 The University should proceed expeditiously to develop a financial reporting system for major projects better suited to the provision of management information.

Finally we wish to offer some comments about the need for clear communication in the pursuit of major projects. The issue is multi-dimensional and we heard of problems arising from the lack of clear communication between Senior Administration and CP&D, between CP&D and users, and within CP&D. On the positive side the senior staff of CP&D are regarded as accessible, sympathetic, and helpful. However, the objectives and priorities of the Senior Administration have not always been made sufficiently clear to the other participants in the process (indeed, have not always come from the same Vice-President), CP&D has not always provided timely and accurate feed-back to users, and urban design issues and regulatory matters appear occasionally to have been introduced unexpectedly and late in the process. This leads us to the following recommendation:

R.20 We recommend that the Vice-President Administration and Finance become more pro-active in ensuring that the wishes of the Senior Administration are clearly communicated; and that the Director ensure that timely and accurate communication with users and within CP&D become matters of high priority.

3.6 Minor Capital Projects

No single aspect of the work of CP&D received more comment from our respondents than did the administration of minor capital projects. In its consideration of this topic the Review Committee was greatly aided by the work of Mr. Michael Hartwick and his colleagues of the Internal Audit Department. This group recently completed an audit of capital and freely shared their findings with us. We found their report, and our meeting with Mr Hartwick and Ms. Tsang to be most helpful. The focus of the internal audit was:

- accounting, budgetary, and financial reporting practices.
- procedures for the selection of architects and contractors.
- terms and conditions of minor capital projects.

It would be redundant for us to repeat the comments and recommendations with respect to these matters contained in the internal audit report. Suffice it to say that our findings, based on our written and oral submissions, would support all the recommendations and conclusions contained in that report. There are, however, a number of matters specifically not within the terms of reference of the Internal Auditor on which we would like to comment.

There is no doubt that the minor capital area is the most contentious aspect of the work of CP&D. The entire process, from the decision of the Provincial Government on the global level of funding, through the process for allocating funds within the campus, to the relationship to repair and maintenance, and finally to the administration of individual projects is not well understood on the campus. There are major criticisms with respect to the estimating, design, and execution of most minor capital projects. Common complaints are:

- lack of timeliness in responding to a request for an estimate.
- poor communication with respect to project status.
- high cost.
- lack of accountability for project delays and/or cost over-runs.
- lack of effective coordination with other departments, such as Plant Operations and Computing and Communications.

To be fair, the criticisms arise from past projects. The staff of CP&D are aware of these deficiencies and have recently taken steps to improve the situation. The practice of allowing up to two hours of free consultation for evaluating the feasibility of projects should reduce the time previously wasted in designing projects which were subsequently abandoned for a variety of reasons. The objective of responding to requests for estimates within 1-2 weeks is reasonable and should be pursued with vigor. We understand that consultations do take place with Plant Operations in the early stages of a project but that the practice is not regularized. We believe that it should be, and that the consultation should include Computing and Communications. Project sponsors (users) should receive regular status reports from the development manager as the project proceeds and there should be a formal "sign-off" procedure at the end of a project.



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The allocation of cost over-runs is a particularly contentious matter. We understand that the current practice is to require the user to find the funds or agree to a reduction in scope if a project goes over budget. We believe that this is appropriate if the over-run is clearly caused by decisions or actions of the user after the budget for the project is set. However, if the cause lies outside the area of responsibility of the user the relevant Department should be held accountable for its actions. Other resources can then be accessed and it may mean that CP&D should have a small general contingency established annually, in addition to individual project contingencies. Requiring the Director to account to the Vice-President for all expenditures from this general contingency would help prevent it from becoming merely a "slush fund" for which no one is accountable.

There is considerable support among user departments for greater use of outside contractors for minor capital projects. We understand that, under current policy, Plant Operations has what amounts to a "right of first refusal" on such projects. Only if they are unable to accommodate the work in reasonable time can outside forces be retained. It is not within our mandate to comment on the wisdom of this policy, however, we believe that it needs to be better explained to the campus community.

There is also support, particularly in the larger Faculties, for a major decentralization of the administration of minor capital projects. Currently some units (e.g., Medicine, Housing and Conferences) can and do manage their own projects, dealing with CP&D only with respect to Regulatory Services. While we understand the frustrations which lead to this suggestion, we urge caution in proceeding with it in isolation of a review of the entire minor capital process. There will always be a need for a centralized planning and development capability to ensure some uniformity of standards and to provide service to smaller Faculties and Departments. Even within the larger units there will be a tendency not to engage the appropriate expertise to manage projects, but rather to assign the task to an existing member of faculty or staff. The result is likely to be an inefficient, and probably ineffective, use of scarce academic resources.

Some respondents suggested that the entire administration of minor capital should be transferred to Plant Operations. This would certainly facilitate integration of renovations with repair and maintenance but may make it more difficult to adhere to the Government's regulations about allowable capital expenditures. Again, we would caution against taking this step in isolation of a more complete review. This leads us to our major recommendation in this area:

R.21 We recommend that the University immediately undertake a complete review and re-engineering of the process for the administration of minor capital projects. The objectives for the re-design of the process should be: improved communication with users at all stages; improved liaison with departments such as Plant Operations and Computing and Communications; an improved process for prioritizing projects; improved accountability for cost and schedule variances; a stream-lined design-build process for small, simple jobs; and finer screening at the feasibility study stage.

3.7 Facilities Resources and Regulatory Services

This unit within CP&D provides both the institutional memory for the buildings and infrastructure of the campus as well as for ensuring compliance with the various building codes which apply. With respect to the RESOURCES function, we received no expressions of dissatisfaction with this service. The "as-built" records of the University are admittedly not complete but are probably no worse than those of other universities of similar age. An attempt is being made to computerize the drawings, thereby simplifying amendments and improving accessibility but progress is slow and further investment is clearly needed. Easy access to accurate records is essential for the work of several departments, notably Plant Operations, Computing and Communications, and CP&D, as well as outside contractors working on campus projects. To ensure accuracy it is essential that there be a single agency with responsibility and authority to maintain and up-date the record, but also that all who discover inaccuracies in the existing record have the responsibility and a convenient means of reporting the discrepancy.

The Committee did discuss whether this function would be better housed within Plant Operations. We concluded that its organizational placement is less important than the functional relationships noted in the previous paragraph, however, we suggest that consideration be given to relocating the function if that would improve the functional linkages. The Committee did feel that there was a need to review the safety and security of the space currently used for the storage of irreplaceable archival material.

The REGULATORY SERVICES function is much more visible and controversial. Because of the unique political situation described in SECTION 3.2, UBC is the "Authority Having Jurisdiction" with respect to planning and code-compliance matters. In order to perform these functions in an apparently arms-length fashion CP&D chose to create a "municipality" model involving formal permits for the various stages of the development and construction process. The group was formed in the fall of 1991 to clarify the function of enforcing the building code. Before that the development managers played two roles, in an obvious conflict of interest. Some of the critics of the current process do not seem to have accepted the rather sensible division of powers. In 1992 the Board of Governors, on the recommendation of the Director of CP&D, adopted the B.C. Building Code, rather than the federal one previously used, as the UBC standard. This has simplified and clarified interpretations and specifications.

There is no doubt that the University is morally and legally obligated to provide a safe, accessible, and healthy working and learning environment. There must be rules and enforcement, but in a regime that is sensitive to the complexities of the university environment, and especially to the sophistication of most university buildings. Thus, Regulatory Services must have a clear philosophical mandate, specific responsibility, and adequate authority. We believe there have been some failures in this regard.

First, let us address the overall issue of how the code should be enforced and where the regulatory group should be located administratively. We received many suggestions and considered several alternatives, such as:

- Turning over the regulatory responsibility to the City of Vancouver (or GVRD or UEL)
- Using external code consultants.
- Requiring architects to engage Certified Professionals
- Clearly separating the regulatory group from the construction function by attaching it to another administrative unit (such as Health, Safety, and the Environment).

- Returning to the old system of combining the code enforcement and construction responsibilities in the development manager.

Any of these alternatives could be made to work. The main issue is that the responsibility for code enforcement should be sufficiently independent to avoid pressure for compromise, yet flexible enough to accept reasonable interpretations of code matters by competent professionals. The main advantage in keeping this function in reasonably close proximity to the development group is the availability of the expertise at early stages within the design process. In the final analysis we saw no great advantage to changing the present structure. The existing reporting structure has the appearance of a slight conflict of interest but no more so than if a municipality decided to construct a building for its own use on its own land.

The existing mechanism for appealing regulatory decisions received criticism that the decisions were arbitrary and inflexible and were too supportive of the inspector's decisions. While we make no judgment about the accuracy of these perceptions we do have a recommendation (R.22, below) which we think will improve the appeal process.

Finally, we see a need for clarification of what is a code issue and what is a matter of standardization. The University needs standards for a variety of good reasons and enforcement of such standards is a responsibility of CP&D in the project management process. We think it important that decisions about a particular material or piece of equipment be clearly identified as a legally required code issue: a mandatory standardization; or a recommended standardization. We suspect, though cannot prove, that the separation of the regulatory process from the project management process has resulted in some slippage in the enforcement of non-code standards. In our view the responsibility for maintenance of the University's quality standards rests with the development manager and the prime consultant, not with Regulatory Services Inspectors. These considerations lead us to the following, multi-part recommendation:

R.22. With respect to Regulatory Services we recommend that:

- **the organizational structure remain as it is but that the mandate of the code inspectors be more clearly defined and communicated to the University community, especially those who become involved in major capital projects.**
- **the Code Appeal Board be supplemented by one or two professional code consultants with relevant expertise.**
- **the advice of inspectors be sought as early as possible in the design process.**
- **decisions about the use of specific materials or equipment be clearly indicated by category: (a) code, (b) mandatory standardization, or (c) recommended standardization.**
- **appeals about mandatory standardization be through the normal administrative processes, not through the Code Appeal Board.**
- **in those cases where a Certified Professional is employed on a project the architect should submit all appropriate "Letters of Assurance" and these should be accepted by CP&D as evidence of code compliance, obviating the need for internal review.**

4. Resources

The mandate of this Committee specifically directs us to review the resources of CP&D in relation to its mandate and the expectations placed upon it. It is difficult to be quantitative in this regard since different institutions organize these functions differently. Appropriate bench-marks in the non-institutional world are also difficult to identify. For example, in Section 2 CP&D suggests that it is significantly understaffed in comparison with the City of North Vancouver, a comparison chosen on the basis of similar "population". We do not accept this as a valid comparison for a number of reasons. First, population, per se, does not generate a demand for the services provided by CP&D. Second, even though the dollar value of projects at UBC was greater than that in North Vancouver, the UBC situation likely represents a much smaller number of projects of much greater complexity. Third, although UBC administers utility systems for which North Vancouver is not responsible, the responsibility for that at UBC is shared between CP&D and Plant Operations.

In comparing the UBC situation with that at other universities two important differences must be kept in mind. First, many universities combine the CP&D and Plant Operations functions in a single Facilities or Physical Plant department. Thus, when one seeks to compare institutions on the basis of "facilities" staff (Section 2) one should also compare the organization structures. Second, UBC is probably unique in the way it has chosen to administer the master planning and code enforcement functions. If one were to compare resources at UBC, Simon Fraser, and the University of Victoria, (setting aside for the moment differences in size and complexity) one should ignore some of the Regulatory Services staff at UBC. One cannot ignore all of it since the staff can and does provide advice in addition to regulation. Other institutions have the same need for advice, without the regulation.

Assuming one could quantitatively correct for these structural differences one is left with the problem of defining a suitable institutional characteristic to use as a standard. Building area may be appropriate for measuring custodial and maintenance work loads (with appropriate corrections for age and complexity of buildings) but is hardly the driver of development activity. In a very rough way dollar value combines the effects of complexity and size. However, to get a good measure of work-load this needs to be combined with the number of major and minor projects underway at any given time, with appropriate account of where given projects are in the conception-design-construction sequence.

Thus, the committee was left with no alternative than to base its comments about resources on judgment informed by our own individual experiences and the perceptions of our respondents. First some facts:

- As of April 1, 1995 the staff complement of CP&D at UBC consists of 50 positions, (6 of which are clerical), 20.5 funded from General Purpose Operating Funds and 29.5 funded from Capital Funds. Four of the professional/technical positions are devoted to the regulatory function.
- The University of Victoria (a much smaller and less complex institution) recently merged its Campus Planning (similar to CP&D) with Buildings and Grounds (Plant Operations) to form a Facilities Management Department. The former Campus Planning Department performed essentially the same functions as CP&D with the exception of space management, master planning, and



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regulation, with a total complement of 16 positions (3 of which were clerical) , approximately 10 of which were funded from the operating budget.

- Simon Fraser University's Facilities Department combining the CP&D and Plant Operations. The functions corresponding to UBC's CP&D are performed by approximately 12 professional/technical staff. Simon Fraser is smaller, less complex, and newer than UBC and does not provide its own regulatory service function.
- The University of Alberta is comparable in size and complexity with UBC and is older. As of January 1995 the Planning and Development Department consisted of 32 professional/technical positions, some of which were vacant and scheduled for closure. Again, the University of Alberta does not provide its own regulatory services.
- The University of Saskatchewan is approximately the same size as Simon Fraser but has a degree of complexity in its array of academic programs similar to the University of Alberta and UBC, although it is probably less "research intensive" than either of these. It is about the same age as the University of Alberta. Planning and Engineering (equivalent to CP&D) is one of 4 divisions within the Physical Plant Department, the Executive Director of which reports directly to the President. Planning and Engineering consists of 24 professional/technical positions, 13 of which were supported from the operating budget. The staff is regarded as too small to discharge the group's mandate. Contract consultants are used to handle peak work loads.

On the face of it CP&D would appear to have adequate staff, in comparison with other institutions. However, several respondents told us, and we are inclined to agree, that the development management function, in particular, was over-taxed by the construction boom recently experienced. As noted earlier, development management is a legitimate project cost and is not, in our view, a good place to try to save money. As noted earlier, we also believe that additional staff to supervise consultants and to support advisory committees are appropriate for the programming area. With these exceptions, we cannot conclude that any perceived inadequacies in the performance of CP&D can be attributed to a shortage of staff resources. In fact, we believe that additional resources to support these areas can be found within the existing budgetary complement, by adopting some of the recommendations contained in this report.

The level and mix of skills and resources necessary in the future is obviously dependent on the scale and nature of future capital programs. Sooner or later the major construction phase will pass and renovation and restoration activities will increase. CP&D needs a staffing plan which anticipates activities, and therefore needs, 3 to 5 years into the future.

R.23. We recommend that CP&D conduct a detailed self-study of future campus development needs with the goal of planning the appropriate mix of CP&D services required. The analysis should be conducted at regular intervals, probably not exceeding 5 years.

5. Conclusion and Summary of Recommendations

The functions performed within the Campus Planning and Development Department are a necessary part of the support structure of a modern, research-intensive university. This review found no glaring omissions or redundancies. There is no doubt that some elements of the Department were over-whelmed by the recent construction boom. Many of the problems which CP&D has experienced in the past can be rectified by improving communications—with "clients", with the Senior Administration, with related departments such as Plant Operations and Computing and Communications, and within CP&D itself. The entire process for the administration of minor capital projects, from the acquisition and allocation of funds to the completion and "sign-off" on individual projects needs an immediate and thorough over-haul.

Overall the Department is adequately staffed. Where additional resources appear called for we believe they can be found by redeployment within the existing complement, and by the use of outside consultants to handle peak loads.

- R.1. The Senior Administration should revisit the mandate of CP&D and should clarify its intent with respect to the roles of owner/ client/ user in major projects and communicate its objectives and expectations to the broader community.
- R.2. The Senior Administration should review and clarify the roles of the various capital advisory committees, such as the Senate Committee on Academic Building Needs and the President's Advisory Committee on Space Allocation.
- R.3. CP&D should enhance its efforts to inform the University community about the consultative, planning, and construction processes. In particular, the Director of CP&D should meet regularly with Vice-Presidents, Deans, and Department Chairs to exchange perceptions and expectations for the planning and development process.
- R.4. More definitive descriptions of the roles and responsibilities of the individual CP&D units should be established. Responsibilities for project "lead" throughout the development process should be clearly assigned; delegation of authority and responsibility for project execution and deviation from approved plans clarified, communicated, and supported at all levels in the University.
- R.5. Staff development and training efforts should be increased to address team-building/commitment deficiencies, enhance morale, and improve management techniques.
- R.6. The Director needs to devote more time to communication activities, primarily within the UBC community. Whether this is achieved by reducing the number of people reporting to the Director or delegating more authority to those who do, is a judgment best left to the incumbent and the appropriate member of the Senior Administration.
- R.7. As a supplement to the proposed cyclical review of this and other administrative units we believe that CP&D, particularly at this point in its history, would benefit from the creation of an Advisory Board, composed of key Deans, Administrators, and Senior Officers to assist in on-going program review and to establish campus advocates for the Department's activities. The Board should meet no more than three or four times a year; should not attempt to "manage" the Department; and should not attempt to assume the roles of other participants in the decision process, such as the appropriate standing committee of the Board of Governors. The Advisory Board should be regarded as a temporary feature and should be disbanded three years after its creation unless good cause can

be shown for its continuation.

R.8 The development process for major projects should be modified to include a powerful advocate for the Main Campus process and its design criteria throughout the design and construction process. A Design Review panel, along the lines of that of the City of Vancouver or the University of Washington, should serve this function. Consideration should be given to establishing a specific budget allocation for urban design elements at the start of the project, in the same way that specific provision is often made elsewhere for the acquisition of appropriate works of art for new buildings.

R.9 The University should make the long-term commitment of funds necessary to support a core CP&D group capable of providing continuity and institutional planning memory. The University should continue to use a mix of staff and consultant expertise in the planning function, with an emphasis on the use of consultants to alleviate the current under-staffing. However, we believe that a modest increase in resources in support of the planning and functional programming activities is warranted.

R.10 The University needs to clarify the authority, responsibility, and accountability of all participants in capital processes. These guide-lines should be made available to contractors and architects along with the designation of the Development Manager and the clear specification that this is the only person authorized to issue instructions on behalf of the owner. This latter role of CP&D staff also needs to be communicated widely on campus.

R.11. The work-load of development managers should be so arranged that they can devote full time to a specific major project as and when necessary. This will involve an appropriate balance of major and minor, complex and simple, projects.

R.12 While there was general support for the mandate of CP&D more visible leadership, clearer accountability, a service orientation, and increased efficiency were all seen as matters deserving of the attention of the Vice-President.

R.13. A senior University official, preferably at the level of a Vice-President, should assume the lead role in planning discussions with the surrounding communities, with technical support from CP&D.

R.14. The Director should ensure that he and his staff develop a heightened awareness of the public relations significance of their work. They are representatives of the University, with a primary responsibility to represent the position of the University.

R.15. The role of members of project committees should be clarified. Each member should receive not only a letter of appointment from the Vice-President, but also instructions outlining the role, responsibilities, and authority of the committee. It should be made clear to whom the member is accountable for their actions or inactions.

R.16. For the programming and schematic design phases of a major project we believe that the current practice of seeking broad user input is appropriate. However, as a project moves to the detailed design and construction phases the size of the committee should be substantially reduced and it should be composed of individuals with the time and commitment to meet on short notice and the authority and responsibility to make decisions in a timely way. As the project evolves the necessary technical support will change from functional programming to development management. Overlap should be adequate to ensure continuity of concept.

R.17 As part of its accountability to the Board, Senior Administration, and the University community CP&D should develop performance criteria based on a regular reporting format that includes, as a minimum, the following information: original schedule and approved changes; original budget and approved changes; reasons for the changes; and origin of the request for the change.

R.18 Newly-appointed members of the Planning and Property Committee should receive an orientation to the capital processes of the University, particularly with respect to the Campus Plan and the relative roles of the Board, its Committee, the Project Committee, and CP&D.

R.19 The University should proceed expeditiously to develop a financial reporting system for major projects better suited to the provision of management information.

R.20 We recommend that the Vice-President Administration and Finance become more pro-active in ensuring that the wishes of the Senior Administration are clearly communicated; and that the Director ensure that timely and accurate communication with users and within CP&D become matters of high priority.

R.21 We recommend that the University immediately undertake a complete review and re-engineering of the process for the administration of minor capital projects. The objectives for the re-design of the process should be: improved communication with users at all stages; improved liaison with departments such as Plant Operations and Computing and Communications; an improved process for prioritizing projects; improved accountability for cost and schedule variances; a stream-lined design-build process for small, simple jobs; and finer screening at the feasibility study stage.

R.22. With respect to Regulatory Services we recommend that:

- the organizational structure remain as it is but that the mandate of the code inspectors be more clearly defined and communicated to the University community, especially those who become involved in major capital projects.
- the Code Appeal Board be supplemented by one or two professional code consultants with relevant expertise.
- the advice of inspectors be sought as early as possible in the design process.
- decisions about the use of specific materials or equipment be clearly indicated by category: (a) code, (b) mandatory standardization, or (c) recommended standardization.
- appeals about mandatory standardization be through the normal administrative processes, not through the Code Appeal Board.
- in those cases where a Certified Professional is employed on a project the architect should submit all appropriate "Letters of Assurance" and these should be accepted by CP&D as evidence of code compliance, obviating the need for internal review.

R.23. We recommend that CP&D conduct a detailed self-study of future campus development needs with the goal of planning the appropriate mix of CP&D services required. The analysis should be conducted at regular intervals, probably not exceeding 5 years.

1995 UBC authors

by Connie Bagshaw

Staff writer

ADAMS, ROBERT A. Calculus: a complete course, 3rd ed. (Instructor's Solutions Manual), Don Mills, Addison-Wesley, 1995. • **ADAMS, ROBERT A.** Calculus: a complete course, 3rd ed. (Student Solutions Manual), Don Mills, Addison-Wesley, 1995. • **ADAMS, ROBERT A.** Single-variable calculus, 3rd ed. Don Mills, Addison-Wesley, 1995. • **ADAMS, ROBERT A.** Single-variable calculus, 3rd ed., (Instructor's Solutions Manual), Don Mills, Addison-Wesley, 1995. • **ADAMS, ROBERT A.** Single-variable calculus, 3rd ed., (Student Solutions Manual), Don Mills, Addison-Wesley, 1995. • **ADLER, ANDREW and JOHN E. COURY.** The theory of numbers: a text and source book of problems, Boston, Jones and Bartlett, 1995. • **ALDERSON, SUE ANN and CADDIE T'KENYE.** illustrator. Ten Mondays for lots of boxes. Vancouver, Ronsdale, 1995. • **ALLDRITT, KEITH.** The greatest of friends: Franklin D. Roosevelt and Winston Churchill, 1941-1945, New York, St. Martin's Press, 1995. • **AMUNDSON, NORMAN and GRAY POEHNELL.** Career Pathways, Richmond, Ergon Communications, 1995. • **ANDERSON, JAMES and MARILYN L. CHAPMAN.** eds. Thinking globally about language education, Vancouver, Research and Development in Global Studies, Centre for the Study of Curriculum and Instruction, University of British Columbia, 1995. • **BARMAN, JEAN, NEIL SUTHERLAND and J. DONALD WILSON.** eds. Children, teachers, and schools in the history of British Columbia, Calgary, Detselig Enterprises, 1995. • **BARMAN, JEAN and MARIE BATTISTE.** eds. First nations education in Canada: the circle unfolds, Vancouver, UBC Press, 1995. • **BARNES, TREVOR J.** Logics of dislocation: models, metaphors, and meanings of economic space, New York, Guilford Press, 1995. • **BATES, ANTHONY WILLIAM.** Technology, open learning, and distance education, London, Routledge, 1995. • **BONGIE, ELIZABETH BRYSON,** translator. The life and regimen of the blessed and holy teacher Syncretica, Toronto, Peregrina, 1995. • **BOSE, MANDAKRANTA.** The dance vocabulary of classical India, 2nd rev. ed. Delhi, Sri Satguru, 1995. • **BULLOCK, MICHAEL.** The invulnerable ovoid aura: stories and poems, 2nd rev. and enlarged ed. London, Third Eye, 1995. • **BULLOCK, MICHAEL.** Kaev ja teisi jutte. [The Well and other stories, translated by Erkki Sivonen.] Tallinn, Estonia, Loomingu Raamatukogu, 1995. • **BULLOCK, MICHAEL.** Stone and shadow = Shi yu ying. Translated by Jin Sheng-hua, Beijing, China Translation and Publishing, 1995. • **CAIRNS, ALAN and DOUGLAS E. WILLIAMS,** ed. Reconfigurations: Canadian citizenship and constitutional change, Toronto, McClelland & Stewart, 1995. • **CALNE, DONALD B. and JOSEPH KING CHING TSUI,** eds. Handbook of dystonia, New York, M. Dekker, 1995. • **CHAPMAN, MARILYN L. and JAMES ANDERSON,** eds. Thinking globally about language education, Vancouver, Research and Development in Global Studies, Centre for the Study of Curriculum and Instruction, University of British Columbia, 1995. • **CHATMAN, STEPHEN.** Fantasies: intermediate piano solos. (Musical score), Oakville, Frederick Harris Music, 1995. • **CHATMAN, STEPHEN.** Blow, blow, thou winter wind. (Musical score), London, Jaymar Music, 1995. • **CHONG, DELANOP.,** ed. Recent advances in density functional methods, Singapore, World Scientific, 1995. • **COCHRANE, D. DOUGLAS, MARGARET G. NORMAN, BARBARA C. MCGILLIVRAY, DAGMAR K. KALOUSEK, ALAN HILL, KENNETH J. POSKITT.** Congenital malformations of the brain: pathologic, embryologic, clinical, radiologic, and genetic aspects, New York, Oxford University Press, 1995. • **COCHRANE, MARK.** Boy am I. Toronto, Wolsak and Wynn, 1995. • **COOPER, JOHN XIROS.** T. S. Eliot and the ideology of 'Four Quartets', Cambridge, Cambridge University Press, 1995. • **COREN, STANLEY.** The intelligence of dogs: a guide to the thoughts, emotions, and inner lives or our canine companions, New York, Bantam Books, 1995. (Translated into six languages.) • **COULTHARD, JEAN,** composer. "Four Irish Songs", Linda Maguire sings, Linda Maguire, mezzo-soprano: CBC Vancouver Orchestra; Mario Bernardi, conductor. (Compact disc) CBC SMCD 5137, 1995. • **COULTHARD, JEAN,** composer. "Sonata rhapsody", Portrait of the viola, Steven Dann; Bruce Vogt. (Compact disc) CBC MVCD1072, 1994. • **COURY, JOHN E. and ANDREW ADLER.** The theory of numbers: a

text and source book of problems, Boston, Jones and Bartlett, 1995. • **CROGG, CECIL.** Two plays for reading: "On the Spot" and "Foolery on the Pedestal", Braunton, Merlin Books, 1995. • **DAVIES, BETTY, JOANNE CHEKRYN-REIMER, PAMELA BROWN and NOLA MARTENS.** Fading away: the experience of transition in families with terminal illness, Amityville, Baywood, 1995. • **DAVIES, BETTY and JOANNE CHEKRYN-REIMER.** Finding your way: grieving the death of your child, Vancouver, Canuck Place - A Hospice for Children, 1995. • **DAVIS, H. CRAIG.** Demographic projection techniques for regions and smaller areas: a primer, Vancouver, UBC Press, 1995. • **DAWSON, ANTHONY B.** Hamlet, Manchester, Manchester University Press, 1995. • **DENNISON, JOHN D.,** ed. Challenge and opportunity: Canada's community colleges at the crossroads, Vancouver, UBC Press, 1995. • **DE SILVA, CLARENCE W.** Intelligent control: fuzzy logic applications, Boca Raton, CRC Press, 1995. • **DRANCE, STEPHEN M.,** ed. Optic nerve in glaucoma, Amsterdam, Kugler Publications, 1995. • **ELKINS, DAVID J.** Beyond sovereignty: territory and political economy in the twenty-first century, Toronto, University of Toronto Press, 1995. • **FOSTER, JOHN WILSON.** The achievement of Seamus Heaney, Dublin, Lilliput Press, 1995. • **FOSTER, JOHN WILSON,** ed. The idea of the Union: statements and critiques in support of the union of Great Britain and Northern Ireland, Vancouver, Belcouver Press, 1995. • **FRIEDRICH, CHRISTOPHER R.** The early modern city, 1450-1750, London, Longman, 1995. • **FROHBERG, JOBST and MARY NÔMME RUSSELL.** Confronting abusive beliefs: group treatment for abusive men, Thousand Oaks, Sage Publications, 1995. • **GRACE, SHERRILL E.,** ed. Sursum corda! the collected letters of Malcolm Lowry, Volume I, Toronto, University of Toronto Press, 1995. • **GUILBAUT, SERGE.** Sobre la desaparición de ciertas obras de arte, Mexico City, Curare / Fonca, 1995. • **HAMMELL, KAREN WHALLEY.** Spinal cord injury rehabilitation, London, Chapman & Hall, 1995. • **HANNA, DARWIN and MAMIE HENRY,** eds. Our tellings: Interior Salish stories of the Nlha7káp̓m̓ people, Vancouver, UBC Press, 1995. • **HEAD, IVAN L. and TRUDEAU, PIERRE ELLIOT.** The Canadian Way: shaping Canada's foreign policy 1968-1984, Toronto, McClelland and Stewart, 1995. • **HERTZMAN, CLYDE.** Environment and health in central and eastern Europe: a report for the Environmental Action Programme for Central and Eastern Europe, Washington, World Bank, 1995. • **HILL, ALAN, MARGARET G. NORMAN, BARBARA C. MCGILLIVRAY, DAGMAR K. KALOUSEK, KENNETH J. POSKITT, D. DOUGLAS COCHRANE.** Congenital malformations of the brain: pathologic, embryologic, clinical, radiologic, and genetic aspects, New York, Oxford University Press, 1995. • **HODGSON, RICHARD G.** Falsehood disguised: unmasking the truth in La Rochefoucauld, West Lafayette, Purdue University Press, 1995. • **HOWES, JOHN F.,** ed. Nitobe Inazô: Japan's bridge across the Pacific, Boulder, Westview Press, 1995. • **HUDSON, NICHOLAS.** Writing and European thought, 1600-1830, Cambridge, Cambridge University Press, 1994. • **IRWIN, RITA L.** A circle of empowerment: women, education, and leadership, Albany, State University of New York Press, 1995. • **JENNINGS, P. DEVEREAUX,** and **LARRY F. MOORE,** eds. Human resource management on the Pacific Rim: institutions, practices, and attitudes, Berlin, W. de Gruyter, 1995. • **KALOUSEK, DAGMAR K., MARGARET G. NORMAN, BARBARA C. MCGILLIVRAY, ALAN HILL, KENNETH J. POSKITT and D. DOUGLAS COCHRANE.** Congenital malformations of the brain: pathologic, embryologic, clinical, radiologic, and genetic aspects, New York, Oxford University Press, 1995. • **KAY, FIONA and JOHN HAGAN.** Gender in practice: a study of lawyers' lives, New York, Oxford University Press, 1995. • **KEMPLE, THOMAS M.** Reading Marx writing: melodrama, the market, and the "Grundrisse", Stanford, Stanford University Press, 1995. • **KNOX, GEORGE.** Antonio Pellegrini, 1675-1741, Oxford, Clarendon Press, 1995. • **LEBLOND, PAUL H. and EDWARD L. BOUSFIELD.** Cadborosaurus: survivor from the deep, Victoria, Horsdal & Schubart, 1995. • **LEE, STEVEN HUGH.** Outposts of empire: Korea, Vietnam and the origins of the Cold War in Asia, 1949-1954, Montreal, McGill-Queen's University Press, 1995. • **LEVI, MAURICE D.** International finance: the markets and financial management of multinational business, 3rd ed. New

Margaret Prang



Keenleyside, a Canadian diplomat who served as first secretary to the Canadian legation in Tokyo in the late 1920s.

A past president of the Canadian Historical Association, Prang had also developed an interest in women's history, including women missionaries, which was gaining credibility as a subject for scholarly study. But only when she was well into her book, which she began in 1986, did Prang realize she was writing the biography she had quickly rejected in 1963.

"(It's) an arresting coincidence, perhaps an example of serendipity, that may cast a little light on how much has changed in the past three decades," Prang writes.

Borrowing a phrase from a 19th-century hymn, "a heart at leisure from itself" is how Macdonald described what she required in a life that engaged all of her abilities and energies.

A native of Wingham, Ont., Macdonald studied mathematics and physics at the University of Toronto, graduating in 1901. She first travelled to Japan in 1904 to assist in the establishment of the Young Women's Christian Association (YWCA).

Later, Macdonald championed prison reform and feminist causes in her adopted country, and became a mentor of labour leaders and social democratic politicians. She was honoured for her service by the Emperor of Japan, and she was the first woman to receive an honorary degree from her alma mater.

At the end of the preface to *A Heart at Leisure from Itself*, Prang compensates for what she says was her "lack of pioneering spirit" 35 years ago.

"If this book enables readers to share my interest in a woman whose life I have found endlessly absorbing, I will be rewarded."

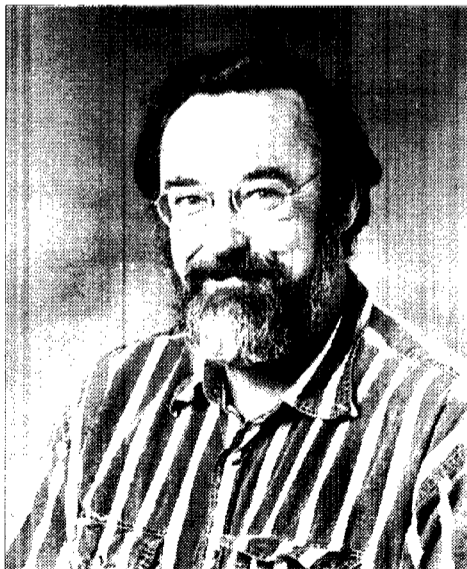
Thirty-five years ago Margaret Prang, now a professor emerita of history, was asked by a friend of a friend if she would be interested in writing a biography of a missionary she knew.

"Nothing interested me less," Prang says in the preface to *A Heart at Leisure from Itself: Caroline Macdonald of Japan*, the extraordinary story of a Canadian who devoted her adult life to working with imprisoned criminals and their families in Japan.

"My energies were directed toward establishing an academic career, and I was already contemplating the biography of a male political figure who fell within the range of acceptable academic subjects," she adds.

Prang became interested in Macdonald after reading about her in the memoirs of the late Hugh

Paul LeBlond



You could say that Paul LeBlond is immersed in his pet topic.

Since 1968, LeBlond, director of UBC's Earth and Ocean Sciences Program, has been pursuing some of the world's most elusive creatures. Called cryptids, they are the undiscovered animals that tantalize and terrorize us—beasts like Nessie, Ogopogo and Champ.

An expert in ocean waves and the author of numerous scholarly publications, LeBlond's *Cadborosaurus: Survivor from the Deep* is his first book about cryptids.

Co-authored by Edward Bousfield,

a retired chief zoologist of the Canadian Museum of Nature in Ottawa, the book summarizes what is currently known about Cadborosaurus (also known as Caddy), B.C.'s very own sea serpent often seen in Victoria's Cadboro Bay.

Although references to a sea serpent abound in west coast native folklore, Caddy didn't become well-known until the New York Herald Tribune announced its existence on Oct. 6, 1933. Many Caddy sightings in B.C. coastal waters have occurred since, some as recently as two years ago.

Depending on which eyewitness account you read, Caddy could be gunmetal blue, bright orange-brown or striped. It either has no teeth, large teeth or a mouth full of teeth. The creature also seems capable of barking, snorting and mooing.

Although the authors find that data is too sparse to draw conclusions about the type of animal Caddy might be, they rank it closely with reptiles and marine mammals. They suggest that Caddy is cold-blooded, carnivorous and a strong swimmer.

LeBlond, a founding director of the International Society of Cryptozoology and president of the B.C. Cryptozoology Club, says he's not sure that the creature exists, but he does believe it's worth investigating.

But, as the book concludes, dear reader, it is now up to you.

Authors at work

Spotlight on authors Mar. 21

The inspiration and creativity of more than 100 UBC authors will be celebrated Mar. 21 at the sixth annual Authors' Reception, hosted by the UBC Library and the Office of the President.

University Librarian Ruth Patrick and President David Strangway will welcome faculty, students and emeriti to Cecil Green Park, site of this year's reception, to salute their publishing achievements for 1995.

In addition to books on everything from the memoirs of a pioneer Canadian neurosurgeon to the dance vocabulary of classical India, UBC authors pro-

duced audio compact discs, interactive CDs for computers, musical scores and documentary films.

The Intelligence of Dogs, by Psychology Prof. Stanley Coren, was published in Japanese, Swedish, Spanish, German, Italian and Finnish.

"As in previous years, UBC authors have written on a wide range of subjects and their expertise is impressive," Patrick said.

"The reception is a special occasion where we celebrate the richness of our library and also, in many instances, our faculties' use of our extensive collections to produce new books."

Fiona Kay

If you're a female legal eagle, chances are you can expect to hit the glass ceiling a lot sooner than your male counterpart.

"There is ample information to support the widespread perception that women in the contemporary legal profession are discriminated against," says Sociology Prof. Fiona Kay who, with John Hagan, a colleague at the University of Toronto, has written *Gender in Practice: A Study of Lawyer's Lives*.

The book is the culmination of 10 years of studying and analysing the structural changes in contemporary legal practice and their effects on women.

Although the authors find little disparity in opportunities for men and women when it comes to obtaining articling positions, they see statistical differences emerging upon entry to practice and partnership, and in salaries, job satisfaction and stress. They say that the variance in success is based on constraint.

"Maternity leave, for example, has a negative impact on women's partnership opportunities, so we see them delaying life cycle patterns like child bearing until they attain partnership," Kay explains. "For women with children, the lack of accommodation, flexibility and balance is another constraint."

"Once they do reach partnership, women are frustrated by not being accorded the same levels of autonomy, responsibility, decision-making powers or compensation as their male colleagues.



There is a higher rate of women leaving the legal profession, largely because of unsatisfactory working conditions, not by genuine choice."

In some cases, the authors found that women in the legal profession earned as low as one-half the salary of men with comparable education and skill.

"This isn't an individual problem that requires minimal response to change," Kay says. "More structural developments are needed in the profession to eliminate such constraint."

Kay says that although both men and women are working together toward change, her research shows that reforms are more successful when pursued by men. Sounds like another book.

Dr. George Szasz

"Is it a boy or a girl?"

That's usually the first question asked by parents at the birth of a new baby. But for some families, the answer is not clear or immediate.

Each year in B.C., about 10 to 15 infants are born with ambiguous genitalia, or external sex organs which are not fully developed, says Dr. George Szasz, a professor emeritus of psychiatry and past director of UBC's Sexual Medicine Clinic.

"It's a time of great confusion, fear and stress for parents," Szasz said. "Some people are so completely overwhelmed with grief, anger and guilt that everyday tasks become difficult to manage."

Szasz and colleague Edna Durbach, director of patient and family education at B.C.'s Children's Hospital, have produced a handbook, *Becoming a Boy or Girl*, to help parents understand ambiguous genitalia, and what to expect as health professionals work to determine their child's gender.

Throughout the 73-page handbook, Szasz and Durbach succeed in turning a complex maze of information into comprehensible, useful knowledge through simple dialogue, drawings and charts. Medical terms are defined in lay language and diagnosis—including descriptions of



the tests and examinations involved and their results—are explained.

"It's important for parents to understand so that they can participate in their child's care and plan for their future in an informed way," Szasz said.

The authors also provide tips to help parents cope through the medical crises, and address common concerns such as when and how to tell the child about their condition.

York, McGraw-Hill, 1996. • **LEVINE, MARC, JAMES P. MCCORMACK, GLEN BROWN, ROBERT RANGNO and JOHN RUEDY**, eds. Drug therapy decision making guide. Philadelphia, Saunders, 1995. • **LIGHTHALL, LYNNE**. Sears list of subject headings. Canadian companion, 5th ed. New York, H.W. Wilson, 1995. • **LOISELLE, ANDRÉ and BRIAN MCILROY**, eds. Auteur/provocateur: the films of Denys Arcand. Westport, Greenwood Press, 1995. • **MCCORMACK, JAMES P., GLEN BROWN, MARC LEVINE, ROBERT RANGNO and JOHN RUEDY**, eds. Drug therapy decision making guide. Philadelphia, Saunders, 1995. • **MCCORMACK, JAMES P., ROBERT RANGNO, JEAN GRAY**, eds. Therapeutic choices. Ottawa, Canadian Pharmaceutical Association, 1995. • **MCGILLIVRAY, BARBARA C., MARGARET G. NORMAN, DAGMAR K. KALOUSEK, ALAN HILL, KENNETH J. POSKITT and D. DOUGLAS COCHRANE**. Congenital malformations of the brain: pathologic, embryologic, clinical, radiologic, and genetic aspects. New York, Oxford University Press, 1995. • **MCILROY, BRIAN and ANDRÉ LOISELLE**, eds. Auteur/provocateur: the films of Denys Arcand. Westport, Greenwood Press, 1995. • **MCTAGGART-COWAN, IAN and VALERIUS GEIST**, eds. Wildlife conservation policy. Calgary, Detselig Enterprises, 1995. • **MCWHIRTER, GEORGE**. Incubus: the dark side of the light. Ottawa, Oberon Press, 1995. • **MATTESSICH, RICHARD**. Critique of accounting: examination of the foundations and normative structure of an applied discipline. Westport, Quorum Books, 1995. • **MAWANI, AMIN**. Estate planning: personal financial planning and personal trust programs. Montreal, Institute of Canadian Bankers, 1995. • **MISRI, SHAILA**. Shouldn't I be happy: emotional problems of pregnant and postpartum women. New York, Free Press, 1995. • **MOORE, LARRY F. and DEVEREAUX P. JENNINGS**, eds. Human resource management on the Pacific Rim: institutions, practices, and attitudes. Berlin, W. de Gruyter, 1995. • **NICHOLLS, WILLIAM MACDONALD and JEANNIE CORSI**. Hikoi: journey with a purpose. A report to Sal'i'shan Institute Society. Vancouver, William Nicholls and Jeannie Corsi, 1995. • **NORMAN, MARGARET G., BARBARA C. MCGILLIVRAY, DAGMAR K. KALOUSEK, ALAN HILL, KENNETH J. POSKITT and D. DOUGLAS COCHRANE**. Congenital malformations of the brain: pathologic, embryologic, clinical, radiologic, and genetic aspects. New York, Oxford University Press, 1995. • **O'LEARY, SARA**. Wish you were here. Toronto, Exile Editions, 1994. • **OUM, TAE HOON, JOHN S. DODGSON, DAVID A. HENSHER, STEVEN A. MORRISON, CHRISTOPHER A. NASH, KENNETH A. SMALL and W. G. WATERS II**, eds. Transport economics: selected readings. [Seoul], Korea Research Foundation for the 21st Century, 1995. • **PAULY, DANIEL, F. GAYANILO and P. SPARRE**. FAO ICLARM Stock Assessment Tools (FISAT) user's guide. Rome, Food and Agriculture Organization of the United Nations, 1995. • **PAULY, DANIEL and RAINER FROESE**. FishBase: a biological database on fish. Ver. 1.2. (CD-ROM). Manila, ICLARM, 1995. • **PAULY, DANIEL and RAINER FROESE**. FishBase: a biological database on fish. Ver. 1.2. (Manual). Manila, ICLARM, 1995. • **PETERAT, LINDA and MARY LEAH DEZWART**, eds. An education for women: the founding of home economics education in Canadian public schools. Charlottetown, Home Economics Publishing Collective, 1995. • **PETERSEN, KLAUS**. Zensur in der Weimarer Republik. Stuttgart, Metzler, 1995. • **PETRO, PETER**. A history of Slovak literature. Montreal, McGill-Queen's University Press, 1995. • **POSKITT, KENNETH J., MARGARET G. NORMAN, BARBARA C. MCGILLIVRAY, DAGMAR K. KALOUSEK, ALAN HILL, D. DOUGLAS COCHRANE**. Congenital malformations of the brain: pathologic, embryologic, clinical, radiologic, and genetic aspects. New York, Oxford University Press, 1995. • **POTTER, PITMAN B.** Foreign business law in China: past progress and future challenges. South San Francisco, The 1990 Institute, 1995. • **PRANG, MARGARET**. A heart at leisure from itself: Caroline Macdonald of Japan. Vancouver, UBC Press, 1995. • **PRATT, GERALDINE and SUSAN HANSON**. Gender, work, and space. London, Routledge, 1995. • **PUE, W. WESLEY**. Law school: the story of legal education in British Columbia. Vancouver, University of British Columbia Faculty of Law, 1995. • **PULLEYBLANK, EDWIN G.** Outline of classical Chinese grammar. Vancouver, UBC Press, 1995. • **RANGNO, ROBERT, JAMES P.**

MCCORMACK, GLEN BROWN, MARC LEVINE and JOHN RUEDY, eds. Drug therapy decision making guide. Philadelphia, Saunders, 1995. • **RANGNO, ROBERT, JAMES P. MCCORMACK, JEAN GRAY**, eds. Therapeutic choices. Ottawa, Canadian Pharmaceutical Association, 1995. • **REVUTSKY, VALERIAN**. V orbiti svitovoho teatru [In the orbit of world theatre.] New York, M.P. Kots, 1995. • **ROBINSON, JOHN, ANTHONY SCOTT and DAVID COHEN**, eds. Managing natural resources in British Columbia: markets, regulations, and sustainable development. Vancouver, UBC Press, 1995. • **ROSS, IAN SIMPSON**. The life of Adam Smith. Oxford, Clarendon Press, 1995. • **RUSSELL, MARY NÔMME and JOBST FROBERG**. Confronting abusive beliefs: group treatment for abusive men. Thousand Oaks, Sage Publications, 1995. • **SACKS, STEPHEN L., STEPHEN E. STRAUS, RICHARD J. WHITLEY and PAUL D. GRIFFITHS**, eds. Clinical management of herpes viruses. Amsterdam, IOS Press, 1995. • **SAINT-JACQUES, BERNARD**, ed. Studies in language and culture. Aichi, Institute of Language and Culture, Aichi Shukutoku University, 1995. • **SAVITT, STEVEN F.** Time's arrows today: recent physical and philosophical work on the direction of time. Cambridge, Cambridge University Press, 1995. • **SCOTT, ANTHONY, JOHN ROBINSON and DAVID COHEN**, eds. Managing natural resources in British Columbia: markets, regulations, and sustainable development. Vancouver, UBC Press, 1995. • **SELMAN, GORDON**. Adult education in Canada: historical essays. Toronto, Thompson Educational Publishing, 1995. • **SHADBOLT, DOUGLAS**. Ron Thom: the shaping of an architect. Vancouver, Douglas & McIntyre, 1995. • **SHAW, CHRISTOPHER A.** Receptor dynamics in neural development. Boca Raton, CRC Press, 1996. • **STANKIEWCZ, W. J.** Záznamy: myslenky & aforizmy = Jottings: thoughts & aphorisms. Brno, Atlantis Publishers, 1995. • **STANWOOD, PAUL G.**, ed. Of poetry and politics: new essays on Milton and his world. Binghamton, Medieval & Renaissance Texts and Studies, 1995. • **STULL, ROLAND B.** Meteorology today for scientists and engineers. Minneapolis/St. Paul, West Publishing Company, 1995. • **SUTHERLAND, NEIL, JEAN BARMAN and J. DONALD WILSON**, eds. Children, teachers, and schools in the history of British Columbia. Calgary, Detselig Enterprises, 1995. • **SUZUKI, DAVID, DENISE DUNCAN, BILL IVENIUK and THE EARTHWORM BAND**. Amazing journey: children sing to the beat of the earth. (Compact disc and cassette tape). Winnipeg, Oak Street Music, 1995. • **SUZUKI, DAVID and EUGENIE FERNANDES**. The backyard time detectives. Toronto, Stoddart, 1995. • **SZASZ, GEORGE and EDNA DURBACH**. Becoming a boy or girl: handbook for parents of babies born with ambiguous genitalia. Vancouver, British Columbia's Children's Hospital, 1995. • **TAKASHIMA, KEN-ICHI and MICHIO MATSUMARU**. Kokotsu moji jishaku soran [Comprehensive guide to interpretation of oracle-bone graphs.] Tokyo, University of Tokyo Press, 1994. • **THOMPSON, PEGGY and SAEKO USUKAWA**. Hard-boiled: great lines from classic noir films. San Francisco, Chronicle Books, 1995. • **THOMPSON, PEGGY**. Broken Images. (Documentary film). Vancouver, Day For Night Motion Pictures, 1995. • **TSUI, JOSEPH KING CHING and DONALD B. CALNE**, eds. Handbook of dystonia. New York, M. Dekker, 1995. • **TURNBULL, FRANK**. Operating on the frontier: memoirs of a pioneer Canadian neurosurgeon. Madeira Park, Capilano Publishing, 1995. • **UPPAL, RAMAN and SERCU PIET**. International financial markets and the firm. Cincinnati, South-Western, 1995. • **VERMA, VIJAY**. Organizing projects for success. The human aspects of project management, Volume One. Upper Darby, Project Management Institute, 1995. • **WATERS II, W. G. and TAE HOON OUM, JOHN S. DODGSON, DAVID A. HENSHER, STEVEN A. MORRISON, CHRISTOPHER A. NASH and KENNETH A. SMALL**, eds. Transport economics: selected readings. [Seoul] Korea Research Foundation for the 21st Century, 1995. • **WILSON, J. DONALD, JEAN BARMAN and NEIL SUTHERLAND**, eds. Children, teachers, and schools in the history of British Columbia. Calgary, Detselig Enterprises, 1995. • **WONG, RODERICK**, ed. Biological perspectives on motivated activities. Norwood, Ablex Publishing Corporation, 1995. • **ZIEMBA, W. T., R. A. JARROW and V. MAKSIMOVIC**, eds. Finance. Amsterdam, Elsevier, 1995.

News Digest

UBC's Development Office is the winner of three awards for publications from the Council for the Advancement and Support of Education. The awards came in the District VIII competition for institutions in western Canada and the northwestern U.S.

Gold awards for design and photography went to *Investing in Knowledge*, an overview of UBC's faculty fund-raising priorities that featured a companion piece for each faculty.

Scholarly Pursuits, a newsletter about supporting UBC student scholarships and bursaries, earned a silver award for design. The publications were produced by the Donor Relations unit of the Development Office. Ron Burke, acting manager of Donor Relations, credited the newsletter with helping to prompt a recent \$1 million gift to the university.

The annual UBC Staff and Faculty Golf Tournament will take place at the Surrey Golf Club on Thursday, April 25.

The entry fee is \$65 and spouses and guests are welcome. The organizers are still missing some of the trophies from last year's event and would like them returned as soon as possible. For information on the event, to line up an entry form, or to return a trophy, contact Doug Quinville by e-mail at doug.quinville@ubc.ca or phone 822-6090.

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The deadline for the April 4, 1996 issue of UBC Reports is noon, March 26.

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RESPONSIBLE, MATURE M.D., spouse, (non-smokers), and cats, require home near UBC for 1-3 years from July onward. Unfurnished OK. References, c.v., etc., available. Phone collect (604) 633-2644 or fax (604) 633-2638.

UBC PROFESSOR REQUIRES house/town house Vancouver West Side for the month of August for visiting retired N/S parents. Please call Reiner at W:875-4011, H:263-2708.

A VISITING PROFESSOR WITH FAMILY from Japan at UBC wants to rent a 2-3 BR, fully furnished apartment or house in UBC area from mid-April to mid-July, at a reasonable price. Contact by e-mail: hatani@naruto-u.ac.jp or fax: +81-886-87-3348.

WANTED: SUBLET TWO-BEDROOM furnished apartment April 1 to July 30 for responsible grad student and small family. Prefer Kits, West End or South Granville - near bus. Call Chantal or Denise at 689-7522.

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House Exchange

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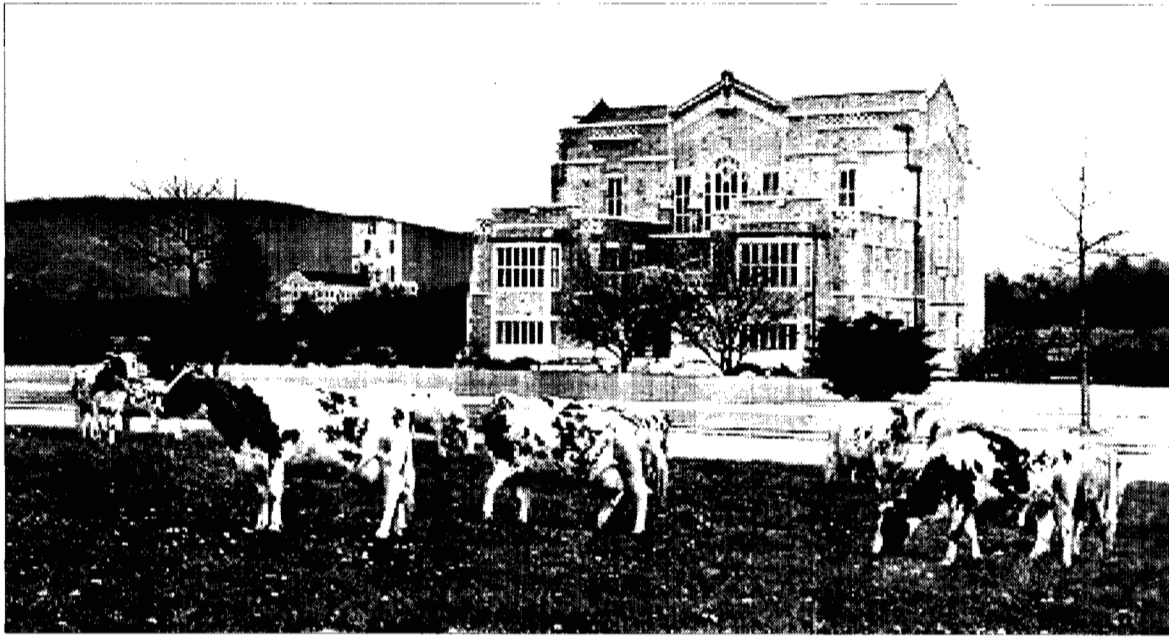
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UBC Archives photo

Cows never grazed in front of Main Library, not even in 1937 when this photograph first appeared. Made of two images combined together, the picture is one of thousands that can now be found on the UBC Library's Special Collections and University Archives' World Wide Web page.

First-of-a-kind conference for university staff set for UBC

Employees from universities and colleges across Canada will gather at UBC May 9-11 for CAM-PUS '96, the first national conference for Canadian university and college administrative, management and professional staff.

UBC's Association of Administrative and Professional Staff (AAPS) is hosting the conference that will involve group discussions and seminars in two distinct streams entitled Working Together Effectively and Building Your Portfolio.

"The decision to host the conference arose out of a need to find out more about what organizations like ours are doing across the country," said Jo Hinchliffe, chair of AAPS' advo-

cacy committee and a member of the conference committee. "The conference will provide an opportunity to find out what other similar groups are doing and at the same time to undertake professional development activities."

Hinchliffe said she expects as many as 300 people to attend the conference, with a possible third of the attendees coming from universities and colleges outside of the province.

Jim Harris, a management consultant and co-author of the national bestseller *The 100 Best Companies to Work for in Canada*, will open the conference as the keynote speaker.

Topics for panel and general discussion include the internal

impact of change, recruiting/motivating members, building an ideal agreement, and the new price of doing business.

Other sessions deal with conflict resolution, managing change and stress management.

Hinchliffe hopes to see the conference become an annual event.

"If we're successful what may come of this is that another university may decide to do it next year in their own province with better representation from that province."

Conference registration is \$200 for AAPS members and \$250 for non-members. For conference information or registration call 822-1050.

Archival photos now on the Web

A special collection of material is waiting for World Wide Web users at <http://unixg.ubc.ca:7001/0/providers/spcoll/welcome.html>.

Approximately 6,000 photographic images from the UBC Library's Special Collections and University Archives Division are now available on-line, with more of its 400,000 holdings being added every day.

"The availability of photographic images on-line helps empower researchers by providing more people with greater access to more photographs," said Chris Hives, acting division head.

"Web access to these holdings decreases the constraints associated with both the researcher's physical proximity to the division and its operating hours. Given the scope of our holdings, this will undoubtedly

become a very long-term project."

Although the project is currently limited to UBC-related photos, net surfers will eventually also find historical provincial photographs, including Barkerville after the fire of 1868 and the arrival of the first train through Prince Rupert on Apr. 9, 1914.

The Special Collections and University Archives Division is located in the Main Library on campus. In addition to photographs, its collection of rare books and Canadiana, historic maps and architectural drawings is a provincial resource for the academic community and the general public.

Photographs on-line are subject to copyright and permission for their use must be obtained from the UBC Library.

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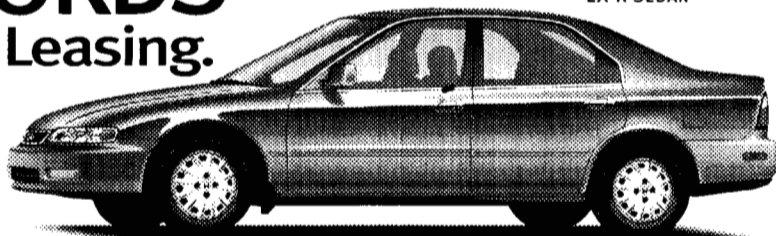
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Stephen Forgacs photo

Richard Prince puts the finishing touches on a black-hooded oriole, part of one of many works of art he has created for the Institute of Asian Research. The various artworks guide visitors on a journey into and through the C.K. Choi building, celebrating the land shared by Asian cultures.

Artist's varied work for building reflects Asia's cultural diversity

by Connie Bagshaw

Staff writer

When Richard Prince was commissioned by the Institute of Asian Research to create a sculpture for the new C.K. Choi building, he quickly abandoned the idea of finding one symbol to represent all Asian civilizations.

"Asia contains cultures as widely different as does any vast continent," Prince says. "It seemed more sensible to focus on the land, an element which is shared by all in Asia."

"The land remains throughout time and history," he explains. "Its beauty can provoke a profound response that carries us beyond our own lives into realms without borders and cultures, uniting us through a universality of experience."

Prince started thinking of the sculpture as a journey through the landscape, represented by the building.

Approaching the C. K. Choi building from the west on the path adjacent to the

Asian Centre, visitors will find four large granite boulders arranged in a grid and inscribed with the Chinese, Japanese, Korean and Hindi interpretations of the concept of stone or the earth.

A single large boulder engraved with the Thai word for granite greets arrivals in the main entrance of the building.

Engraved zinc images of the ginkgo tree, an ancient species also known as the Chinese temple tree, will be found on a support post next to the central staircase.

On the third floor, the Ganges River is carved into the concrete surface of the hallway. Prince designed his map-like rendering of India's sacred river to be flush, filling it with an epoxy and bronze powder mixture.

Crossing the Ganges, visitors can proceed to the reading room where they will find a brightly coloured yellow and black bird, the black-hooded oriole, mounted on the rim of the dome over the lounge area. Prince chose the bird because its habitat stretches across southern and

eastern Asia.

The black-hooded oriole, which holds a ring in its bill, is the key to the entire sculpture, Prince said. He explained that the bird, and the perch-like sighting device mounted outside—beyond the transparent dome—form a sight line directly to Polaris which is in the sky, night and day.

"My hope is that those who experience the sculpture will see it as not only a journey through a building and a sculpture, but also as a mediator which promotes poetic speculation on the relationships between eastern and western cultures," he said.

Prince, who started the project in August 1995, expects the work to be completed next month. The C.K. Choi building is scheduled to officially open Oct. 7, 1996.

Campus plays part in nuclear test ban treaty

Canada has joined forces with 11 other countries to help enforce a global ban on nuclear testing. UBC is one of five Canadian sites chosen to house a special atmospheric detection device which will check the air for radioactive particles.

The UBC station, located on a small pad in a field near the Totem Park residences, is one of 21 proposed sites in an international network of monitors.

Prof. Douw Steyn, chair of UBC's Atmospheric Science Program, says the 770-kilogram machine sucks air into a

filter which traps radioactive debris particles. The filter will be checked daily with results being stored in the International Data Centre (IDC) run by the United Nations.

"There are all kinds of research opportunities which go along with this device but its prime objective is to detect the unannounced testing of nuclear bombs," said Steyn.

Test ban treaty negotiations began within the Conference on Disarmament in Geneva, Switzerland in January 1993. Negotiators quickly identified the IDC as a central component of an effective verification policy.

Ottawa, Resolute, Yellowknife and St. John's are the other Canadian cities in the monitoring network. Participating countries include Australia, Germany, Finland, Kuwait, Netherlands, New Zealand, Russia, Sweden, England and the U.S.

Canada's participation is funded by Health Canada.

Comet's blaze sight to behold

The UBC observatory opens its doors to the public later this month for a peek at what could potentially be the brightest comet in 20 years.

"Comets are notoriously unpredictable but this one is coming close enough and will be visible from our latitude," said Asst. Prof. Jaymie Matthews. "It will certainly be more prominent than the reappearance of Halley's comet 10 years ago."

Named after the Japanese amateur astronomer who discovered it in January, the Hyakutake (Hyah-koo-tah-kay) comet will pass Earth at a distance of 15 million kilometres, close enough to be seen by the naked eye.

Matthews said the comet is expected to be brightest in late March and may develop more of a prominent tail throughout April as it moves closer to the sun.

The observatory will be open to the public from 8 p.m. to midnight on four successive nights starting Saturday, March 23. Matthews said people will be able to learn more about comets by using interactive software available during the comet opening. UBC astronomers hope to show a televised image of the comet pulled from one of the observatory's smaller guiding telescopes.

Space watchers who prefer to see the comet through binoculars at home should look between the Big and Little Dippers on Tuesday, March 26 when it is expected to shine the brightest. Observers will be able to notice a change in the comet's position from one night to the next, a change which Matthews says represents approximately 20 degrees a day.

Matthews said most comets are discovered by amateur astronomers who usually uncover between 10 and 20 comets each year.

The last time the observatory was opened on successive days was in the summer of 1994 when the Shoemaker-Levi Comet struck Jupiter. Close to 1,800 observers passed through the facility over four nights to view the spectacle.

The UBC observatory is located in the Geophysics and Astronomy Building at 2219 Main Mall. For more information call 822-2267.

Centre for neurological research gets go-ahead

Senate has approved the creation of a Brain and Spinal Cord Research Centre based in the faculties of Medicine and Science and operating in partnership with the Vancouver Hospital and Health Sciences Centre (VHSC).

The centre's aim is a unique collaboration that builds on the existing neuroscience efforts of more than 70 UBC and VHSC neuroscience research groups and will enhance the work of five existing endowed chairs in the neurosciences—the Jack Bell Chair in Schizophrenia, the Marianne Koerner Chair in Brain Diseases, the Louise A. Brown Chair in Neuroscience, the Alcan Chair in Neurosciences and the Man in Motion Chair in Spinal Cord Research.

The centre will be based at UBC using existing space in the faculties and in VHSC's University Hospital pavilion, with links to other centres of neurological study such as the Eye Care Centre and VHSC's 12th and Oak Pavilion.

Initial efforts will focus on six established neuroscience research strengths: neurodegenerative disorders such as

Alzheimer's and Parkinson's diseases; demyelinating diseases, such as multiple sclerosis; neural repair of, for example, spinal cord injuries; schizophrenia; stroke; and vision.

Within the next few decades, neurological disorders are expected to overtake cancer as the second leading cause of death and disability. Recent advances in molecular neurobiology and neural development have opened up opportunities for new interventions and therapies that could prevent or cure these disorders.

The Faculty of Science has established a spinal cord repair group known as CORD (Collaboration on Repair Discoveries). CORD will be the focus of spinal cord research within the centre.

A flagship project of the Medicine 2000 strategic plan for the Faculty of Medicine the centre will also offer industrial liaison opportunities in pharmaceuticals and biotechnology. It will also interact with other faculties at UBC, such as the other health sciences and Arts.

A director for the centre will be named at a later date.

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