SOCE RESEARCH INVENTORY

1-Jun-05

No.	Program	Name	Areas of expertise	Topics of Research Interest	Research Projects			BCITResearch Infrastructure
					Participants	Project Description	Funding agencies(start-end)	
1	Architectural and Building Engineering Technology	Vaso Leposavic	Construction cost consulting and civil engineering	Cost analysis of new technologies; innovative solutions used in construction (alternative energy sources, green roofs, LED lights); packaging solutions (bottle design)	Maureen Connelly	GRRF	NRC 2004-2005	GNWC
					Natalia Leposavic	Bottle design/ patent	not funded	Plastics Engg program
					N/A	Mobile sedimentation	2002-2005	Not known
2	Architectural and Building Engineering Technology	Janet Snell	Architect (experience in high-rise concrete and structural steel to wood frame to adaptive reuse); carpenter/renovator (hands-on application experience in wood-frame and heritage)	Materials application and issues; durability (lifecycle), compatibility, regional materials issues, sustainable usage; materials performance in Building Envelope	n/a	n/a	n/a	Partially - Building Science lab facility (not yet built) in NE1
3	Architectural and Building Engineering Technology	Ronald Krpan	Structural engineering, building science, building envelope, wind-driven rain, rain penetration control.	Wind-driven rain and rain penetration control: quantification of wind-driven rain on building surfaces, quantification of rain penetration, development of strategies for rain penetration control, development of associated design guidelines.	Ron Krpan Hua Ge	Building Envelope Test Hut: A feasibility study for the construction of a real weather, real time field test facility for building envelopes.	Canada Mortgage and Housing Corporation, Home Owner Protection Office, Forintek. 2002 to current	A new lab is currently under construction to support Building Science research, but will not meet all related needs of proposed research.
	Architectural and Building Engineering Technology;		Architectural science, and applied research in acoustics, green roof and		Maureen Connelly K.Liu/NRC.	Green Roof Research initiative.	CHMC/GVRD/EC/ PWGSC/NSERC/ Industry 2002-2007	GRRF at GNWC and throughout regional infrastructure; vegetative wall systems - GRRF has been set up for this research in the future; acoustics - equipment in boxes
					J.Newton and C.Wilson.	Instrumentation & DA Tech Centre.		
					O. Petrov, E. Hiob.	Chemistry/Water Quality Programming.		

4	Centre for the Advancement of Green Roof Technology	Maureen Connelly	living wall systems specifically the within the context of sustainable building design and construction implementation.	Acoustics, vegetative roof and wall systems, sustainability, and the relationship between the three.	V. Leposavic, J.Schaub, Trades Instructors, 8 students	Life Cycle Cost CAGRT Research		for safe keeping may go into new Building Science lab in NE1.
5	Architectural Science (B.Tech.)	Donald Luxton	Heritage conservation (principles and practices); architectural history (research and writing); heritage building restoration (conservation planning, detail, specifications and supervision)	Materials (performance and conditions reports); historic paint technology	Vancouver Heritage Foundation	Historic Paint Research	Benjamin Moore Paints 1999-ongoing	
6	Architectural Science (B.Tech.)	John Lovatt	Building science; energy use and conservation in buildings; air movement and ventilation in buildings; indoor air quality; instrumentation and measurement; materials science	Develop accurate vertical surface rain gauges (driving rain); improve ventilation systems and air quality in high-rise residential buildings; develop techniques and equipment for condition assessment of buildings.				
7	Architectural Science (B.Tech.)	Peter Levar	Project architect - running projects, coordination, project management in architectural practice	Sustainability, re-cycling and re-using of existing materials (salvage) into new construction; adaptive re-use.	Peter Levar, Nancy Paris-Seeley	Living Lab/Architect Prototypical Designs for the Aged and Disabled.	BCIT/SFU 1997-1998	Unaware of any.
8	Architectural Science (B.Tech.)	Jim Taggart	Architecture with particular interest in regional technology and sustainability; contemporary architecture in wood, with a particular emphasis on new materials and products and their application in green buildings.	Any research that can support the dissemination of information relating to new ideas, methodologies and applications for regional technology in support of sustainable development.	Jim Taggart	AIBC Architects in Schools Program	Canada Council Vancouver Foundation 1993	Would not require technical support of lab equipment and facilities.
						VSB Public Art Project	Vancouver Foundation 1995	
						AIBC Architects in the Community	Federation of Canadian Municipalities, Real Estate Foundation 1997	

9	Building Science Centre	Hua Ge	Testing and analysis of moisture and thermal performance of building envelope; analysis of energy performance of whole buildings		Hua Ge Ron Krpan	Wind-driven rain/ impact on building envelope	Currently seeking funding (Sep 04 - present)	Building Science lab (NE1-230) under construction. Effort to see funding to develop a field station to investigate wind-driven rain, its impact on building envelopes.
						Interaction of bldg envelope/indoor environment (international proj.)	Concordia University (May 04 to present)	
						Experimental investigation of hygrothermal performance of wall systems	Concordia University (2002-04)	
						Study on overall performance of metal/curtain wall	Concordia University (1997-2002)	
10	Canadian Housing and Construction Centre	Wayne Stevens	Housing/habitation with a particular focus on wood-frame housing.	Design flexibility, healthy, accessibility, durability, energy efficiency and sustainability.				NE3 - Home 2000 and NW7
11	Civil Engineering Technology	Ken Zeleschuk	Construction materials testing, project management	Construction materials testing - concrete, wood, steel, masonry	S. Brzev	flexural testing of masonry beams	Masonry Institute 2005	SW1-1068/70 Structures Lab SW3-1650 Concrete/Asphalt/ Soils Lab
					J. Lavoie	high volume fly ash self-consolidating concrete	UANL 2004-2005	
						tensile adhesion of silicone coatings		
					C. Forrest M. Demonye	flexural testing of reinforced concrete beams	Tremco 2004	
					S. Brzev		Harris Rebar Heidelberg Cement 2004	

12	Civil Engineering Technology	Chris Niwinski	Wave hydrodynamics, ocean wave hindcasting, wave/structure interaction, surface and sub-surface hydrology, closed conduit and open channel hydraulics	Surface and sub-surface hydrology, conduit and open channel hydraulics. Numberical modelling of wave hydrodynamics, wave hindcasting models, wave/structure interaction models.	Seaconsult Marine Research Ltd. Various students	Various wave hindcasting, wave hydrodynamics and wave/structure interaction. Student research projects confirming basic theory in surface hydrology and practical hydraulics.	Private/public organizations involved in offshore oil industry 1982-88 BCIT 1990-2005	BCIT has no wave hydrodynamics labs. We have some field equipment for surface/sub-surface hydrology and river hydraulics. More would be needed to conduct meaningful research. Lab space not an issue - most research would be done on full-scale systems.
13	Civil Engineering Technology	Paul Thurston	highway design, urban street design, construction contract administration	Transportation; land development issues				n/a
14	Civil Engineering Technology	David Wong	Operations of water supply and sewage disposal facilities	Water supply and sewage disposal systems.	Tin Tun (Alberta Environment) Guy Croome (City of Edmonton) Tom Patten (John Carollo Engineers) Paul Miller (CH_2M Hill)	performance evaluation of septic systems - N. Alta effect of freeze-thaw cycle on sludge pilot study-use of activated silica for drinking water treatment bench tests and plant trials of anionic and cationic polymers for water treatment tetrachloroethylene removal from aquifer pilot study for use of granular activated carbon at Chalk Bluff Water Plant	Alberta Environment 1979 Water & Sanitation Dept., City of Edmonton 1985 Water & Sanitation Dept., City of Edmonton 1986 Water & Sanitation Dept., City of Edmonton 1987 Sierra Pacific Power Co., Reno, Nevada 1990 Sierra Pacific Power Co., Reno, Nevada 1991	Water and wastewater system operation research will require co-operation of industry sponsors to supply equipment and facilities for projects.

15	Civil Engineering Technology	Bryan Folz	Structural engineering, earthquake engineering, timber engineering	Structural modeling and computational analysis; structural testing; engineering education.	Collaborators: Frank Lam, Helmut Prion & Ricardo Foschi UBC, Eric Jones CWC	expand use of glued-laminated beams (Glulam) by establishing reliability-based procedures to qualify/optimize new construction of Glulam in CSA 0122	Natural Resources Canada (Apr 04-Apr 07)	Upgraded Structures Lab should be adequate for small applied research activities. Technical support staff needs to be bolstered to conduct experiments.
						CUREE-CalTech Woodframe Project - combined research/implementation project to improve seismic performance of woodframe buildings.	FEMA and California Governor's Office of Emergency Services Jan 2000 to July 2001	
						structural and seismic performance of woodframe structures	Independent work - unfunded (Sept 2001 to present)	
16	Civil Engineering Technology	Svetlana Brzev	Structural engineering, earthquake engineering, design and rehabilitation of concrete and masonry structures	Passive seismic control technologies (base isolation and dampers); behaviour and modelling of concrete and masonry structures; use of fibre reinforced composites in structural rehabilitation	Marjorie Greene (EERI), and others	World Housing Encyclopedia - development of Internet-based database on world housing (www.world-housing.net)	Earthquake Engineering Research Institute Endowment Fund (January 2000 to present)	
					Ken Zeleschuk	Behaviour and failure modes of masonry beams with different grouting schemes under static loading	Masonry Institute of BC, Tech Centre (Fall 2004 to present)	
					S.J. Pantazopoulou (University of Toronto)	Rehabilitation of masonry structures using non-metallic fibre composite reinforcement	ACMBS network and CSCE (1994)	
17	Civil Engineering Technology	Patrick Stewart	geotechnical engineering, materials engineering	site investigation, seismic effects, numerical modeling	R.G. Campanella	Seismic core	NSERC 1989-1992	Only for numerical modeling. Other areas would likely require use of UBC facilities.

18	Civil Engineering Technology	Robert Schubak	structural engineering, applied mechanics; failure analysis, nonlinear response of structures, structural dynamics, seismic response, structures for fall arrest	development of analytical and design methods for concrete structures, soil/structure interaction, fall arrest	R. Schubak R. Schubak R. Schubak	Development of analytical methods to predict displacement and damage to stiffened plate ship structures from blast loading Failure investigations of reinforced concrete pulp stock tanks that had cracked and were leaking; parameter study & recommendations of how to achieve desired serviceability states; additional investigations of water reservoirs and pipes; several finite element analyses of other forms of tank and absorber vessels. Buried pipe failure investigations.	DND - Defence Research Establishment Suffield 1985-1990 Stebbins Engineering & Manufacturing Company, and others 1993-1994, 2000-2004 various clients 1994-2000	Testing of analytical and design methods could be achieved in existing structures lab. Field work is more viable for infrastructure research which would likely need partnering with municipalities or utilities.
19	Civil Engineering Technology	Ed Reid	computers, soils, highways, ground water modeling (numeric methods)	computer applications, numeric ground water modeling (incl. finite elements analysis), highway design				
20	Civil Engineering Technology	Martin Bollo	structural engineering-structural steel, reinforced concrete, wood and masonry; earthquake engineering-new design, seismic retrofit and damage investigation.	applied research in areas of listed expertise.		seismic retrofit tests on concrete viaduct	Caltrans U.C. Berkeley 1990-1991	new Structures Lab

21	Construction Management (M.Sc.)	Arezou Pouria	Computer integrated construction (CIC)	use of Information Technology in Construction Management, product/process modeling, web technologies; construction safety, sustainability	PhD research at UBC	Formalization of Transactions in AEC/FM industries	NSERC	Computer labs.
22	Fish, Wildlife, Recreation	Mark Angelo, Robert Gunn, Tom Saare, Doug Ransome, Marvin Rosenau	River restoration, river management, watershed planning, environmental monitoring	urban stream restoration, dam decommissioning, monitoring of fish and wildlife populations in response to changes in habitat	All FWR Staff All FWR Staff All FWR Staff	Burnaby Lake System Project monitoring of Coursier Dam decommissioning restoration and monitoring of Still Creek	City of Burnaby, Province, Dept. of Fisheries & Oceans 1991 - present BC Hydro 2004 - 2014 City of Burnaby, private donors 1999 - 2010	Most work is done out of SW1-2025 (FWR lab) and computer lab. Will require updating in future.
23	Renewable Resources	Jace Standish	Soils, arboriculture, forest ecology	urban soils; hazard tree assessment; land reclamation; wildlife trees	J. Standish, students: K. Stec, M. Bernardo, C. Bakke J. Standish B. Rothe J. Standish J. Standish J. Standish M. Sondheim D. Spittlehouse T. Rollerson P. Teti J. Standish	inventory/mapping trees in Queen Elizabeth Park cultivation of yew trees for taxol development of biomass equations for BC tree species reclamation of asbestos tailings soil and vegetation development at Mt. Robson monitoring soil water regime with respect to river stage in the Bulkley and Nechako rivers	Vancouver Parks 2004-present BCIT Tech Centre, ISTC, TPL Phytogen 1992-96 Environment Canada, Canadian Forestry Service, 1979-1983 Cassiar Asbestos 1986-1987 UBC, BC Forest Service Research Branch 1979-1980 ALCAN 1982-1983	Greenhouse was useful, but there is little left of it.

24	Renewable Resources/Forest Ecosystems	Peter Yanciw	Forest health, forest insect and disease damage, damage assessment and surveys, forest ecology	root disease spread and impact, reducing the impact of rust disease in conifers, assessment of dwarf mistletoe impact, physical devices for seedling protection.	P. Yanciw (student project) P. Yanciw (student project) P. Yanciw (student project)	assessment of Armillaria root disease impact impact of pruning on growth rates and rust mortality seedling protection devices, impact on deer browse rates and seedling growth rates	none 2000 none 1996-current Sinocast Industries 1999-2000	Need outdoor forested research area with some form of tenure for long term projects. All projects P. Yanciw has been involved in have been based at the woodlot in Maple Ridge.
25	Geomatics	John Olusegun Ogundare	Deformation monitoring and analysis; precision surveys/geodetic surveys; spatial data analysis and adjustments	automation of monitoring surveys - electronic coordinating systems, integrated monitory system (using conventional, GPS, laser scanning systems)				
26	GIS	Jonathan Candy	GIS web services; GIS software application development; mobile applications; location-based GIS and indoor mapping; database software, operating systems (UNIX); open source software and open GIS	Create GIS research centre specializing in open source (Free) GIS; open source GIS training materials; develop indoor GIS web-based applications; link up with BCIT Health to examine GIS epidemiology applications	J. Candy and 2 BCIT students J. Candy J. Candy	location-based services using open source GIS server continue update of GIS R&D web-site indoor GIS R&D (presented InLoc 2002, July 2002, published in Ortun und Navigation Journal)	Nokia/BCIT Tech Centre Jan-May 2005 spare time 2001-present Telus/BCIT Tech Centre 2001-2002	Computer lab infrastructure in place. Hardware costs apply to new mobile devices. Other costs are the mobile services airtime/data links. Main issue is funded release time for R&D work.
			The creation of a variety of cartographic products, including thematic and general reference maps, DEM's and GIS data layers; the assessment of geomorphic hazards using mainly remote sensing data to limit the needs for site visits; development of instructional material on the topics of cartography, digital mapping, remote sensisng, and earth science.	Time-series mapping of Beluga dive behaviour in the Arctic Development of a GIS-based recurrence interval model for debris flows in Banff National Park. Assessing the effects of changes in land use/cover, climate and seismic activity of mass wasting and denudation processes in the Himalayas, India				

27	Geomatics/GIS	Eric Saczuk		Evaluating the feasibility of a mobile platform for rapid rock slope stability analysis using a Cyrax terrestrial laser scanner.				
28	Geomatic Engineering Technology	Don Thomson	Geodesy (and Precise Engineering Surveys), Hydrographic surveys for offshore resources	slope stability/slope monitoring		research at University of New Brunswick _____ research with private companies	various government geomatics agencies, NSERC 1970's funded by clients - BC Hydro, Mobil Oil 1980's-1990's	Yes - but instrumentation and software will be issues.
29	Wood Products Initiative	Wei Li	Wood science and forest products	wood drying and wood quality, value-added products, under-utilized species and forest residue in BC	Ian Hartley (UNBC) _____ J. English, faculty, staff _____ I. Hartley (UNBC) Bob Guy (Forintek)	thermal properties of mountain pine beetle damaged wood Community Kiln Drying (technology transfer and training package) _____ opportunities in Chinese market for BC hardwood	TBA 2004-2006 (est.) _____ SoCE, BCIT, Western Economic Diversification 2003-present SoCE, BCIT, University of Northern BC, Forintek Canada Corporation 2002-2003	prototype kiln located at rear of Home 2000 for wood drying activities. Wood science lab is very necessary for research and education purposes.

30	Environmental Engineering	Lorne Sampson	environmental engineering, environmental toxicology	water and wastewater, air quality, contaminated sites, environmental impact assessment, public health issues related to environmental engineering	L. Sampson L. Sampson	supervised over 80 EET student research projects Toxicokinetics and Tissue Distribution of Selected Bleached Kraft Mill Contaminants in Largescale Sucker	Quite often carried out in student's workplace; non-monetarily sponsored by government agencies 1998-2005 BCMOELP	Depends on research project. Environmental Engineering lab available for projects SW3-1695.
31	Interior Design	Robin McIntosh	Interior design with an emphasis on environmental responsibility and sustainability	Sustainability and lighting related to interior design; work with ABET to develop healthy, green, aesthetically pleasing and affordable mobile home; work with local lighting manufacturers to develop interior application products using energy-efficient LED technology.				use of existing ABET facilities; LED products would probably require use of local manufacturer facilities.
32	Interior Design	Dixie Hudson	lighting - generally and specifically LED lighting	lighting - sustainability, energy efficiency, work productivity, response to light within spaces; wind power; LED lighting				Would like to set up lighting lab for students/industry projects/research.
33	Interior Design	Wayne De Angelis	Architecture, building science, sustainable and energy efficient design.	Smart Home, using smart systems for operation, in conjunction with residential construction using materials that are non-evasive to environment, obtained from natural resources.				Living Lab (DTC), Home 2000, millwork shops, Construction labs, ABET areas.
34	Interior Design	Barbara Dunn	Interior design, including business practices and graphic presentation.	set up "working office" to promote practical application of design theory and technical skills.				
35	Interior Design	Katherine Isaac	Funeral home design; commercial and residential work; NCIDQ qualified	Women's representation in interior design history.	K. Isaac	Identity and Image in Metropolis Magazine	2004	
36	Interior Design	Anne Savill	Interior design	Design education for the 21st Century				

37	Structural Drafting and Design	Anna Trajkovic	Reinforced concrete design; tilt-up construction; structural steel design and detailing	Energy efficiency of tilt-up buildings; "sandwich panel" tilt-up construction; seismic response of tilt-up buildings - design loads related to occupancy and soil conditions; mitigation of seismic damage				
38	Carpentry - Trade	Rick Dohl	Carpentry skills; curriculum development	Practical installation details for rain screened walls; training curriculum for carpentry skills for aboriginal bands; automated building systems used by pre-manufactured industry				
39	Carpentry - Trade	John Martan	Carpenter, site superintendent for residential and commercial projects	Building envelope issues in constructing insulated concrete forms	Lou Stamenic Marita Luk	Solar energy (PEARL) Boston Bar Kiln Project	2001 2003	
40	Joinery - trade	Dave Dunn, Carl Catt, Rob Sawatzky, Dave Stimson, Don Shortt, Paul Schmid	Computer numeric control (CNC) woodworking equipment; AUTOCAD, Joinery trade in general, automation	various types of tooling, rpm's, feed rates; edge-banding; adhesives				

41	Piping - trade	All Piping Department Staff	Design/selection and installation of domestic water systems, backflow prevention devices, drain, waste and venting systems, rural sewage systems, hot water (hydronic) heating systems, medical gas piping systems, specialized piping systems, all plumbing fixtures and accessories; Testing of domestic water backflow assemblies; Servicing of all plumbing systems; Fusion welding for HDPE piping systems; Interpretation of National and Provincial Plumbing Codes; design/selection/installation for steamfitting/pipefitting, gasfitting, sprinkler fitting.		Piping staff/students Piping staff/students David Bowles Bill Evans Bill Johnston, Gary Clifford, Bill Evans, Peter Fenrich (conducted research)	Installation of lumber kiln mechanical system installation/testing of new roof drain system develop and test interactive M/C testing system with audio component for students with reading disabilities develop training simulator for testing backflow assemblies develop training simulator for testing and troubleshooting hydronic heating systems. Research to determine effectiveness of tool.	SoCE 2004-ongoing 1990 (?) BCIT - 2000 (?) mid-late 90's ongoing BCIT. Peter secured some grants to conduct research. Mid-late 90's.	
42	Finishing Department-Trade	Stuart Browning	Building envelope in high-rise construction; architectural aluminum window systems	window systems that consist of photovoltaic panels	D. Browning J. Browning L. Stamenic	BCIT Solar Tower	2003	
43	Painting and Industrial Finishing-Trade	David Lick	painting and wall coverings; production finishing on wood, metals, composite materials; general safety including scaffolding and rigging	semi-automatic to automatic finishing equipment and application procedures; advanced powder coating, especially on wood		Solar Power Tower Green Roof project		

44	SOCE Management	Marita Luk	Project coordination, proposal preparation, marketing and promotion.		G. Fillinger Wei Li Tech Centre Gary Fillinger Eric Smiley	community kiln - proposal for further experimentation and development of 3 more kilns in 3 First Nations communities proposal for development phase of First Nations Preparation Prgm Centre for Energy Systems Applications	Western Economic Diversification 2004-2005 Indian Studies Support Program 2005 various 2005	
45	SOCE Management (Associate Dean)	Wayne Hand	Project management	building science, green roof technology, manufactured housing	Maureen Connelly Hua Ge, Ron Krpan	Green Roof CMHC, HPO, Forintek, Concordia University	NRC, NSERC, CMHC, Environment Canada, GVRD 2003-2007 ongoing	have had to be constructed around research initiative e.g. Green Roof Research Facility, Building Science lab