

## Information Resources

Information resources for the Planning programme fall under the Information Resources unit at the University of Calgary. This unit comprises the Library including the Canadian Architectural Archives, the Image Centre including the Media Library and Visual Resources Library, the University Archives, University Press and The Nickle Arts Museum. Most planning-related materials are found in the Library and Image Centre.

<b>Summary: Information Resources - Resources Related to Planning</b>	<b>Approximate Number in Collection</b>
<b>Image Centre</b>	
Media Library: Videos, etc.	103
Visual Resources Library: Slides, Digital images 250,000 slides 22,405 digital images	Not possible to quantify for planning
<b>Library</b>	
Monographs	13,300
Serials and Periodicals Current Subscriptions	108
Serials: related subscriptions	223

### IMAGE CENTRE COLLECTIONS AND SERVICES

The Image Centre includes the Media Library and the Visual Resources Library. It also houses media services used by the University community: photography and digital imaging, copyright office, digitization centre, media marketing (marketing and distribution of University of Calgary educational media.) More information about the Image Centre is available from the Web site, [www.ucalgary.ca/imagecentre/index.htm](http://www.ucalgary.ca/imagecentre/index.htm).

#### Media Library and Visual Resources Library Collections

The Media Library has a collection of over 9,000 audio-visual titles in a variety of formats (VHS, BETA, 16mm, DVD, CD-ROM, etc.), for instructional use. Of this collection, there are 103 on planning, urban and city planning, transportation and urbanization, cities and towns and metropolitan areas. There are also other titles that may support planning, such as those related to architecture and country/cultural studies.

The Visual Resources Library currently has 250,000 35mm slides and 22,405 high-resolution digital images. The slide collection contains the merged slide collections from the Faculty of Environmental Design, the Department of Greek and Roman Studies and the Art Department. Although the number of planning-related slides and images cannot be quantified, this is an important resource for the programme. Collection development is a collaborative effort between the Visual Resources Library and the main Library unit of Information Resources.

#### Services

The Media Library provides facilities for faculty and students to view instructional materials. Some of these materials circulate either on campus only (for classroom viewing), or may be

borrowed. Media Library staff work with instructors to obtain appropriate materials. There is also a reciprocal borrowing agreement with Mount Royal College Library, the Alberta College of Art and Design (ACAD) and the Southern Alberta Institute of Technology (SAIT.)

The Visual Resources Library staff provides orientations of the slide and digital image collections, as well as individual instruction, and offers reference services. The Library also maintains the slide collection, processes images, maintains the catalogue according to professional standards, and develops and maintains image databases. This includes provision of online access to thumbnails of the collection. It is anticipated that these thumbnails will be upgraded to include links to high-resolution images in the winter of 2005.

### **Staff**

The Image Centre serves all disciplines and so the amount of time spent on planning can not be quantified. The Media Library has one manager and two Information Specialists on staff: one responsible for acquisitions and cataloguing, and one for reference and interlibrary loans. The Visual Resources Library employs 3 staff members: a curator, a curatorial assistant and a student.

### **Facilities**

Fall/Winter Hours for the Media Library and Visual Resources Library:

Monday – Thursday: 8:30 a.m. – 4:30 p.m. (5:30 p.m. for pre-booked viewings)

Friday: 8:30 a.m. – 4:30 p.m.

Saturday (October – April): 9:00 a.m. – 4:00 p.m.

The Media Library has one large viewing room and 6 individual viewing stations can be booked. They are equipped to handle all media formats. The Visual Resources Library has areas for course preparation and slide review. There are also 4 large light tables and 3 slide projectors for faculty and students.

### **Budget/Administration**

Media funds are interdisciplinary so the amount spent specifically on planning can not be quantified. Costs of media material are shared equally between the Image Centre and the requesting department; material is kept in the Media Library and is available for campus-wide use. There are also Library funds for videos and DVDs; these materials are requested through the Liaison Librarians, and are kept in the Media Library.

The Library unit of Information Resources has a collection budget to purchase commercially available digital images. Requests can be made through the Liaison Librarian for Images. The Visual Resources Library funds in-house digitization of images and handles copyright issues.

## **LIBRARY COLLECTIONS AND SERVICES**

The University of Calgary Library is an integral part of the University's teaching and research. It provides resources and services in a variety of formats to the University and its community. The Liaison Librarian for Planning works with the Planning faculty and students to build the library collection and to provide the appropriate services.

The Library has 5 branches covering 23,264 square metres. The main branch, MacKimmie Library, holds the majority of planning-related materials. Other materials, however, may be found at the Gallagher Library of Geology & Geophysics, as well as the Law and Business Libraries. A complete report of all of the Library's holdings can be found in the University of Calgary Fact Book ([www.oia.ucalgary.ca/Facts.htm](http://www.oia.ucalgary.ca/Facts.htm).)

## Collections

The University of Calgary Library's collection of planning-related materials supports the Planning programme as well as the undergraduate Urban Studies programme. In addition to books, planning-related documents include print and digital maps, particularly Calgary fire insurance maps and air photos of Calgary and area. The Library collection also includes census tract level data and census data by Calgary community district. The Library is a depository of the City of Calgary Planning Department, and so receives many of its documents. Also of note are the samples of city planning documents from communities across Alberta; this collection is updated every 5 to 10 years.

### *Collections: Books*

Planning-related materials are purchased under various funds across the library, as well as under the planning fund. In 2002, the planning and environment funds were merged into one fund, 47011. The total number of planning-related books in the library is approximately 13,300. Due to the interdisciplinary nature of planning this includes books classed under environmental psychology, environmental influences on man, environmental policy, housing, urban transportation, communities, classes and races, regional planning, aesthetics and planning of cities, parks, environmental protection and pollution, watersheds, and road design.

Total Number of Planning-Related Books in Library Collection		
Call number range	Subject	Number of books
BF353-353.5	Environmental psychology	115
GF51-127	Environmental influences on humans, Human influences on the environment. Settlements. Cities. Urban geography. Rural settlements. Rural geography	327
HC79 .E5	Economic history and conditions, special topics: environmental	683
HD100-1395.5	Land use	1525
HD7285-7931	Industrial hygiene. Industrial welfare; labor policy. Labor and the state	1335
HE300-380	Urban transportation; urban geography. Trade routes; traffic engineering. Roads and highways. Streets	254
HT101-395	Urban groups. The city. Urban sociology. Regional planning	6143
NA9000-9428	Aesthetics of cities. City planning and beautifying	736
RA770	Housing and public health	6
SB481-486	Parks and public reservations Including theory, management, history	277
TD169-189	Municipal engineering. Environmental protection. Environmental pollution	481
TD419-493	Water pollution. Water purification. Water treatment and conditioning. Saline water conversion. Water distribution systems	539
TD878-894	Special types of environment Including soil pollution, air pollution, noise pollution	844

TE175-178	Highway design. Interchanges and intersections; Roadside development. Landscaping	43
TE279-295	Streets; Pedestrian facilities; Sidewalks. Footpaths. Flagging	31

Number of Titles Purchased per year by Subject – All Funds Planning							
Subject Area	1999	2000	2001	2002	2003	TOTAL 1999- 2003	Average # Titles/yr
BF 353-353.5 - Environmental Psychology	3		1	10	2	16	3
GF 51-127 Environmental influences on man & vice versa; landscape assessment, settlement	12	12	9	14	13	60	12
HC 79 Environmental policy, selectively	41	29	37	44	41	192	38
HD 101-1395, Land use	47	28	15	35	36	161	32
HD 7285-7931 Housing	24	15	7	9	19	74	15
HE 305-380 Urban transport	13	14	11	22	23	83	17
HT 101-165-178, 165.5-395 Urban studies, city planning, urban renewal	96	124	81	112	144	557	111
NA, Aesthetics of cities. City planning and beautifying	9	15	18	13	19	74	15
RA 770 Housing and public health	3	4	2	2	4	15	3
SB 481-486 Parks	6	6	7	4	10	33	7
TD 169-195,419-493,878-894 Environmental protection, selectively	48	60	30	62	63	263	53
TE175-17178.8, 279-298, Roads, streets, highways,pedestrian facilities	1			1	6	8	2
B Aesthetics, Ethics			1	1		2	0
T Sciences – Technology		3	2	4	7	16	3
Social Sciences (C,D,E,F,H,J,K,L)	12	13	25	7	41	98	20
TOTAL	315	323	246	340	428	1652	330

### ***Collections: Serials***

The library subscribes to many serials that support planning. These include those purchased by the Environment/Planning fund (47015), as well as other funds across the library. Increasingly, many journals are available online as part of larger journal packages.

Electronic journals and indexes are also providing greater access to journals. The library uses SFX, a software package that links electronic indexes to online holdings or library catalogue. This has eased access greatly. Additionally, the library subscribes to Ingenta, which provides tables of contents notification and search alerts.

The Environment/Planning serials fund includes 108 journals; Appendix A lists all serials on this fund. Of that list, 42 specifically support planning. Those are listed below.

Alternatives journal (Waterloo)  
Axis  
Berkeley planning journal  
Builder (Washington DC 1981)  
Canadian journal of environmental education  
Canadian journal of regional science  
Canadian journal of urban research  
Canadian water resources journal Revue canadienne des ressources hydriques  
Current housing research  
Economic development quarterly  
EnviroLine  
Environment and planning D : society and space  
Environmental ethics  
Environmental policy and law  
International development planning review : IDPR  
International journal of urban and regional research  
International regional science review  
Journal of environmental systems  
Journal of planning education and research / Association of Collegiate Schools of Planning  
Journal of the American Planning Association  
National parks (Washington DC)  
PAS memo  
Plan Canada  
Planning (Chicago Ill 1969)  
Planning Advisory Service report index  
Planning forum  
Planning perspectives : PP  
Regional studies  
Report / American Planning Association, Planning Advisory Service  
Resources  
Town and country planning : the quarterly review of the Town and Country Planning Association  
Town planning review  
Urban design update  
Urban history  
Urban morphology : journal of the International Seminar on Urban Form  
Vital signs : the trends that are shaping our future / Lester R Brown, et al  
Women + environments international magazine

Working paper / Institute of Urban & Regional Development, University of California, Berkeley  
 World watch (Washington DC)  
 Worldviews : environment, culture, religion  
 Worldwatch paper

There are also serials not purchased by the planning fund that may be planning related. These fall in various categories, enumerated below:

<b>Number of Planning-related Serials – Other funds</b>	
Serials: related subscriptions	223
Art and Architecture	36
Building and construction	5
Communities. Urban and regional studies	25
Community development	2
Economic history and conditions	7
Engineering	10
Environmental technology	27
Highway engineering. Roads and pavements	11
Human geography and ecology	7
Industries. Land use	29
Parks and recreation	7
Tourism	25
Transportation	28
Miscellaneous	4
Call numbers include G155, GF, GV, HC79 .E5, HD, HE, HN, HT, KE, NA, SB480s, TA, TC, TD, TE, TF, TH, TJ, TL	

### ***Collections: Article Indexes***

The Library subscribes to over three hundred article indexes in both print and electronic format. The interdisciplinary nature of the Planning programme means that many of these indexes will be used for research and study. A select list of planning-related indexes and interdisciplinary indexes follow. The majority of these are accessible via the Web in the Library or off-campus; one or two are CD-ROMs. Many of these also have full-text content. A complete list is available from the Library Web site ([www.ucalgary.ca/library/gateway/indabs.html](http://www.ucalgary.ca/library/gateway/indabs.html).)

### ***Planning-related:***

- *Avery Index to Architectural Periodicals*: Indexes more than 1,000 periodicals published worldwide on architecture, archaeology, city planning, interior design, and historic preservation. Coverage is from 1977 to present.
- *GEOBASE*: Bibliographic references with abstracts to important journals, books, monographs, reports and theses in the fields of physical and human geography, geology, mineralogy, ecology, environmental studies and development studies. Coverage is from 1993 to the present.
- *Journal of Planning Literature*: Review articles and abstracts of recent literature in the field of city and regional planning

- *PAIS International - Public Affairs Information Service*: Public and social policy literature of business, economics, finance, law, international relations, public administration, government, political science, and other social sciences -- with emphasis on issues that are or might become the subjects of legislation. Coverage is from 1972 to the present.
- *Sage Urban Studies Abstracts*: Abstracts of important recent literature on all aspects of urban studies. Coverage is of items published from 1998 to present.
- *TourCD*: Bibliographic database that includes references and abstracts to the world's published scientific literature in all aspects of leisure, recreation and tourism research.

#### *Interdisciplinary:*

- *Canadian Research Index*: Citations and abstracts for publications issued by the federal government and the governments of the ten provinces and three territories, including policy papers, statistical reports, annual reports, and research papers. Also includes information on Canadian dissertations. Coverage is from 1982 to the present. The Library has the full-text of the documents on microfiche.
- *CBCA Complete (Canadian Business & Current Affairs Databases)*: CBCA Complete is comprised of CBCA Business, CBCA Current Events, CBCA Education, and CBCA Reference. Subject coverage is comprehensive. Areas covered include: current events, business, education, science and medicine, arts, law, academia, and lifestyles, all with a Canadian focus. Coverage is from 1982 to the present.
- *EconLit*: Comprehensive, indexed bibliography with selected abstracts of the world's economic literature. Coverage is from 1969 to the present.
- *LexisNexis Environmental*: Citations and abstracts to journal articles, conference papers, government and other publications covering all aspects of human and technological impact on the environment. Includes Environment Abstracts. Coverage is from 1975 to the present.
- *Sociological Abstracts*: Sociology and related disciplines by including bibliographic citations, abstracts and enhanced dissertation citations. Coverage is from 1980 to the present. Includes Social Planning/Policy and Development Abstracts for 1980-1999.
- *ProQuest Digital Dissertations*: Indexes doctoral dissertations and master's theses worldwide. Coverage is from 1861 to the present, with abstracts from 1980. The Library has purchased access to the fulltext of theses covering the time period 1997 to present.
- *Web of Science*: References in all subject areas from Science Citation Index, Social Sciences Citation Index and Arts and Humanities Citation Index. Provides citation searching from known reference to papers that cite it. Coverage is for papers published from 1975 to the present.

#### **Services**

Most Library services for planning are offered out of MacKimmie Library. The Liaison Librarian offers information literacy sessions as well as one-on-one office consultations to planning students. Additionally, first-year planning students are introduced to their librarian during orientation and encouraged to set up appointments early in their programme. The Liaison Librarian for the Map and Air Photo Collection instructs students on maps, air photos and Statistics Canada data, particularly census data.

### *Information Commons*

Students and faculty also have access to the Information Commons, located on the second floor of the MacKimmie Library. It combines the services of Information Resources and the University's Information Technology unit. There are two information desks which handle library and research-related questions, IT- and computer-related questions (Information Commons Service Desk), and those relating to maps and air photos, academic data and statistics (MADGIC – Maps, Academic Data and Geographic Information Centre.) There are over 250 workstations equipped to access library resources, Microsoft Office software, and black and white and colour printing. Laptop docking stations are available with wireless connection ability. The Information Commons also has two instruction rooms with 25 PCs each for library and IT instruction (Word, PowerPoint, etc.) There are 14 workrooms that may be booked for group study.

### *Document Delivery*

At no charge to the University user, the Library provides access to planning-related materials held in other libraries around the world. *CISTI Source* provides a large selection of science/technical/medical journal articles published from 1995 onward within 2-3 working days, while the mediated document delivery services provides theses, books, journals, and conference proceedings.

The Library is a member of several consortia including COPPUL (Council of Prairie and Pacific University Libraries), TAL (The Alberta Library), and CNSLP (Canadian National Site Licensing Project, now CRKN, Canadian Research Knowledge Network.) Institutional memberships give additional borrowing privileges to staff and students. Additionally, as a CRL (Centre for Research Libraries) member, the Library may borrow from the CRL's research collection on behalf of the University users. The Library also has many close ties with other national and international libraries.

### **Staff**

In addition to the Planning Liaison Librarian, planning students and faculty have access to staff in the Information Commons. The Information Commons Service Desk and MADGIC Desk are staffed with reference and IT staff; IT staff are available during all of the Information Commons' open hours.

Tasks such as acquisitions, cataloguing, circulation, document delivery, reserve services and collection maintenance are centralized and so include planning-related materials. These tasks are carried out by various staff in the MacKimmie Library, and so it is not possible to determine time spent specifically on planning. A complete report on the total staffing within the Library can be found in the University of Calgary Fact Book ([www.oia.ucalgary.ca/Facts.htm](http://www.oia.ucalgary.ca/Facts.htm).)

### **Facilities**

The Planning Liaison Librarian is available during regular office hours, Monday to Friday.

During the Fall/Winter term, the Information Commons is open:

Sunday – Friday: 24 hours a day, 5 days a week

Saturday: 10:00 a.m. – 5:45 p.m.

Reference service is available:



Weekdays 8:00 a.m. – 9:00 p.m. (ending at 4:30 p.m. on Fridays)

Saturday: 10:00 a.m. – 5:45 p.m.

Sunday: 11:30 a.m. – 4:30 p.m.

Phone reference is also available on weekdays during regular office hours.

During the Fall/Winter term, the Library is open:

Monday – Thursday: 7:30 a.m. – 10:45 p.m.

Friday: 7:30 a.m. – 7:45 p.m.

Saturday: 10:00 a.m. – 5:45 p.m.

Sunday: 10:00 a.m. – 10:45 p.m.

Other branches and service points, such as the MADGIC Desk are open different hours.

Complete information can be found on the Library website:

[www.ucalgary.ca/library/frames/hours2.html](http://www.ucalgary.ca/library/frames/hours2.html)

### **Budget/Administration**

The Liaison Librarian for Planning expends the collections budget with consultation from programme faculty and students. The Library also has interdisciplinary video and image funds, however it is not possible to specify what was spent on planning-related items. While digital images are available online through the Image Centre and Library Web pages, videos are housed in the Image Centre Media Library collection.

### ***Budget/Administration: Books***

There is one main fund for purchasing planning-related funds, 47011. Prior to 2002, the planning fund was separate, but is now merged with the environment fund. The library has also allotted “Pillar” funds to books in areas of research focus according to the University’s Academic Plan. Undergraduate students also support the library through an annual Student Union levy; these funds purchase undergraduate-level materials.

Expenditure per year by Funds Planning							
FUND CATEGORY	1999	2000	2001	2002	2003	Total \$ 1999- 2003	Average \$/YR
Environment*	\$3,007	\$5,137	\$4,286	\$12,214	\$19,264	\$43,908	\$8,782
Urban/Regional Plan*	\$3,628	\$5,011	\$4,147	\$48		\$12,833	\$2,567
Social Sciences	\$4,636	\$4,135	\$4,273	\$4,590	\$6,216	\$23,848	\$4,770
Pillar				\$11,610	\$2,748	\$14,358	\$2,872
Science	\$2,877	\$4,162	\$529	\$852	\$3,479	\$11,899	\$2,380
Student Union	\$3,847	\$2,023	\$2,366	\$1,754	\$598	\$10,587	\$2,117
Library	\$3,695	\$1,357	\$1,185	\$2,788	\$1,556	\$10,582	\$2,116

Gov Pubs	\$949	\$1,678	\$938	\$495	\$790	\$4,851	\$970
Arts and Humanities	\$33	\$199	\$556	\$229	\$144	\$1,161	\$232
Special Funding	\$121		\$212	\$393	\$309	\$1,034	\$207
<b>TOTAL</b>	<b>\$22,792</b>	<b>\$23,701</b>	<b>\$18,492</b>	<b>\$34,972</b>	<b>\$35,104</b>	<b>\$135,061</b>	<b>\$27,012</b>

\* funds merged in 2002 into the Environment fund

<b>Number of Titles Purchased per year by Funds</b>							
<b>Planning</b>							
<b>FUND CATEGORY</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>Total # Titles 1999-2003</b>	<b>Average #titles/yr</b>
Environment*	37	66	70	138	257	568	114
Urban/Regional Plan*	70	78	71	1		220	44
Social Sciences	77	63	53	44	74	311	62
Pillar				94	26	120	24
Student Union	47	27	19	16	7	116	23
Science	31	39	6	7	27	110	22
Gov Pubs	31	36	10	14	16	107	21
Library	17	11	7	17	15	67	13
Arts and Humanities	2	3	7	4	3	19	4
Special Funding	3		3	5	3	14	3
<b>TOTAL</b>	<b>315</b>	<b>323</b>	<b>246</b>	<b>340</b>	<b>428</b>	<b>1652</b>	<b>330</b>

\* Funds merged 2002 into the Environment fund

### ***Budget/Administration: Serials***

The 2004 budget for the planning-related serials fund is \$21,385. Of that, approximately \$9,744 goes specifically towards the planning-related serial titles listed above. Other expenditures on related serials covered by other library funds amounts to approximately \$37,913. These figures do not include the serials covered by subscriptions to journal packages.

## Sources

Image Centre

<http://www.ucalgary.ca/imagecentre/index.htm>

Information Resources

<http://www.ucalgary.ca/IR>

Library

<http://www.ucalgary.ca/library>

Library hours

<http://www.ucalgary.ca/library/frames/hours2.html>

University of Calgary Fact Book

<http://www.oia.ucalgary.ca/Facts.htm>

## Appendix A – Journals on 47015 Fund

Advances in agronomy  
Air pollution studies / Economic Commission for Europe, Geneva  
Alces  
Alternatives journal (Waterloo)  
Ambio  
Ambio special report  
American forests  
Annual Alberta Soil Science Workshop : proceedings  
Annual report / Canadian Museum of Nature  
Annual report / World Agroforestry Centre  
Annual report on the federal-provincial agreements for the eastern Canada Acid Rain Program  
Annual work plan  
Appropriate technology  
Audubon  
Axis  
Berkeley planning journal  
Biodiversity : journal of life on earth  
Builder (Washington DC 1981)  
Canadian journal of environmental education  
Canadian journal of regional science  
Canadian journal of urban research  
Canadian water resources journal Revue canadienne des ressources hydriques  
Computer graphics world  
Conservation biology  
conservationist  
Consumers' research magazine  
Current housing research  
Earth system monitor : a guide to NOAA's data and information services  
Economic development quarterly  
Elevation west : the newsletter of the Alberta, Saskatchewan and Manitoba Associations of Architects  
EnviroLine  
Environment (St Louis)  
Environment and planning D : society and space  
Environmental conservation  
Environmental ethics  
Environmental policy and law  
Environmental reviews / NRC = Dossiers environnement / CNRC  
Environmental technology  
Environments  
Five-year forest and range resource program  
Foot notes newsletter  
Foothills Model Forest publications  
Forest health & biodiversity news  
HortScience : a publication of the American Society for Horticultural Science  
Human dimensions of wildlife : an international journal focusing on human dimensions of fish and wildlife management  
International development planning review : IDPR  
International journal of urban and regional research  
International regional science review

Journal of applied ecology  
Journal of ecology  
Journal of environmental quality  
Journal of environmental systems  
Journal of forestry  
Journal of planning education and research / Association of Collegiate Schools of Planning  
Journal of range management  
Journal of soil and water conservation  
Journal of the American Planning Association  
Journal of the American Society for Horticultural Science  
National parks (Washington DC)  
National wildlife  
Nature Canada  
Nature Conservancy  
Nature's resources  
Newsletter - Canadian Society of Environmental Biologists  
Newsletter of the North Pacific Anadromous Fish Commission / NPAFC  
Options : a IIASA news report  
Partners in preservation : a volunteer newsletter  
PAS memo  
PLA notes : notes on participatory learning and action  
Plan Canada  
Planning (Chicago Ill 1969)  
Planning Advisory Service report index  
Planning forum  
Planning perspectives : PP  
Priorities and progress under the Great Lakes Water Quality Agreement  
Pulp & paper Canada  
Rangifer  
Regional studies  
Report / American Planning Association, Planning Advisory Service  
Research notes / Laurentian Forestry Centre  
Research paper  
Resources  
Science findings / PNW, Pacific Northwest Research Station  
Special publication  
State of the environment, report for Manitoba  
State of the world  
Technical report / North Pacific Anadromous Fish Commission  
Town and country planning : the quarterly review of the Town and Country Planning Association  
Town planning review  
Transactions of the North American Wildlife and Natural Resources Conference  
Unasylva / Food and Agricultural Organization of the United Nations  
Urban design update  
Urban history  
Urban morphology : journal of the International Seminar on Urban Form  
Ursus  
Vital signs : the trends that are shaping our future / Lester R Brown, et al  
Water environment research : a research publication of the Water Environment Federation  
Water quality research journal of Canada  
Weatherwise

WEF highlights : news for members of the Water Environment Federation

Wild lands advocate

Women + environments international magazine

Working for wildlife

Working paper / Institute of Urban & Regional Development, University of California, Berkeley

World conservation

World watch (Washington DC)

Worldviews : environment, culture, religion

Worldwatch paper

EXCERPT