

CHRISTINE THURING

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EDUCATION

Doctor of Philosophy

Department of Landscape Architecture, The University of Sheffield, Sheffield, UK (2016)

- Thesis: “Ecological dynamics on old extensive green roofs: vegetation and substrates more than twenty years after installation” supervised by Nigel Dunnett.

Master’s of Science

Department of Horticulture, The Pennsylvania State University, State College PA (2005)

- Thesis: “Green roof plant responses to different media and depths in drought” supervised by David J. Beattie and Robert Berghage.

Bachelor of Science

Environmental Resource Science and Biology, Trent University, Peterborough, Ont. (1999)

Year abroad

Universität Hohenheim, Stuttgart (Germany) (1997-1998)

GRANTS, FUNDING, AWARDS

- 2018 **“Elevated Lab: Technologies and Ecologies”**, BCIT Green Values Strategy Fund. \$73,400 granted for two years to design, build, install and monitor a green roof complex at BCIT Burnaby campus.
- 2015 **PhD prize for original contribution to knowledge**, Landscape Research Group. £500 prize money and one year’s academic membership.
- 2009 **Early Career Researcher**, “Green Roof Systems”, EU Marie Curie Industry Academia Partnerships & Pathways (FP7-PEOPLE-2007-3-1-IAPP). The University of Sheffield. £60,000 for 24 months.
- 2003 **Academic Excellence**, Katherine Mabis McKenna Fellowship. US\$ 12,000 for 24 months, Penn State University.

WORK EXPERIENCE

- 2018-present *BCIT Centre for Architectural Ecology* (Vancouver, BC), Faculty, Researcher, Sessional Instructor.
- 2009-2018 *University of Sheffield* (Dept. of Landscape), Visiting Scholar, PhD Researcher, Sessional instructor, Studio tutor.
- 2008-present *Chlorophyllocity* (small consultancy) (www.chlorophyllocity.com), Principal Details from select projects given below.

- 2015 Short-listed for new Faculty Chair position (Urban Ecology and Sustainable Living) at *Ecole Polytechnique Fédérale de Lausanne, School of Architecture, Civil and Environmental Engineering*, Lausanne, Switzerland.
- 2008-2012 *Green Roof Safari* (www.greenroofsafari.com), Co-founder and Manager.
- 2006-2007 *NATS Nursery Ltd.* (Langley, BC), Resident Ecologist and Living Roof Specialist.
- 2006-2008 *BCIT Centre for Architectural Ecology* (Vancouver, BC), Member of interdisciplinary team for research and teaching but also:
 - Project Coordinator for World Urban Festival III (2006);
 - Marketing and Communications Strategist (2007-08);
- 2005 *Zürich University of Applied Sciences* (Wädenswil, CH), Organizational Team Leader for 1st World Green Roof Congress.
- 1999-2002 *Plant biologist*
Various projects and organisations, including Royal Botanical Gardens (Burlington, ON), Grand River Conservation Authority (Cambridge, ON), and Ontario Ministry of Natural Resources (Peterborough, ON).

TEACHING

Academic Teaching

2018-present

BCIT Centre for Architectural Ecology, Instructor

GROW 1000 ***Green roofs: Design, Installation and Maintenance*** (18 hrs)

GROW 1500 ***Green walls: Design, Site Logistics & Implementation*** (12 hrs)

GROW 2000 ***Planting for the Pacific Northwest*** (18 hrs)

2009-2018

The University of Sheffield, Department of Landscape: Instructor, Studio tutor

LSC 210 ***Habitats and Communities*** (2010)

- co-develop practical field course instructing undergraduates on vegetation sampling and description methods (15 students)

LSC 203 ***Ecological Design Project*** (2011) (with Mel Burton)

- studio tutorials; site visits (20 students)

LSC 302 ***Biophilic Design & Landscape Ecology*** (with Nigel Dunnett) (ND)

- deliver some lectures; teach; studio tutorials; site visits (15 students)

LSC 334 ***Green Infrastructure and Ecological Masterplanning*** (2014-2018) (with ND)

- develop the curriculum, manage program (2017-2018)
- deliver some lectures, arrange for external speakers
- lead on site visits to natural and designed ecosystems (20 students)

LSC 335 ***Restoration Ecology*** (with Dr. Ross Cameron) (2014-2017)

- deliver lecture on applied restoration; studio tutorials (15 students)

LSC 6001 MA1 ***Post-industrial design and urban ecology*** (with ND)

- deliver some lectures; teach; studio tutorials; site visits (86 students)

LSC 6112 MA1 ***Ecological Urbanism*** (with ND)

- deliver some lectures; teach; studio tutorials; site visits (120 students)

LSC 6116 MA1 **Research Methods** (with Helen Woolley) (2016 - 2018)

- deliver lecture on science-based research and data analysis; support MA students develop their dissertations; studio tutorials; marking

The University of Sheffield, Department of Geography. Instructor, workshop leader.

GEO 384 **Critical Ecologies** (15 March, 2017, 18 April, 2018)

- develop and deliver two workshops over one day, highlighting opportunities for pollinators and urban agriculture in the built environment
- Workshop title: “Improving the Environment: Creating Diverse Local Ecosystems”
- coordinate with other workshops on field day at Regather Trading Co-operative

2006-2008

BCIT, Centre for the Advancement of Green Roof Technology, Instructor

ARCSI 8210 **Green Roofs and Living Walls for Environmental Solutions**

GROW 0001 **Green Roofs: Concepts, Systems and Incentives**

GROW 1000 **Green Roofs: Details, Installation, and Maintenance**

GROW 1500: **Green Roofs and Living Walls for Environmental Solutions**

GROW 2000 **Green Roofs: Planting in the Pacific Northwest**

Supervision

Currently supervising two students at BCIT:

- Dane Sabey, BTech in Environmental Engineering (2018-2020). Thesis title: ***Native Pollinators and the Habitat Template Approach to Green Roofs - If You Build it Will They Come?***
- Harvy S. Takhar, Master’s of Building Science (2019-2020). Thesis title: ***Blue-Green Roofs: Comparing performance between two green roof systems in Vancouver BC.***

Development of Professional Courses

2019-2020

Green Roofs for Healthy Cities, Green Roof Professional (GRP) accreditation program

- develop and adapt GRP course for delivery at BCIT Centre for Arch. Ecology

2009-2011

The University of Sheffield, Research Innovation Services (Postgraduate services)

GSC630 **Postgraduate (PG) Café Forum**

- co-design and write course accreditation for a 5-credit module the supports PGs in developing skills to communicate their work across disciplines to diverse audiences
- co-found and serve on committee (President)

2007

University of Wisconsin-Madison, Engineering Professional Development.

Designing biofiltration BMPs for stormwater quality improvement.

- prepare and deliver two sessions:
 - i) ***Plant selection for biofiltration practices***
 - ii) ***Planting media and plant selection for green roofs***
- Deliver at workshop in Victoria, BC (May 7-9, 2007).

2006-2008

NATS Nursery, Ltd, Lunch & Learn.

- prepare presentation for Landscape Architects, Municipalities and Students in Metro Vancouver and Seattle (delivered between 20-30 times)
- Title: “***Bridging the Gap: From Growers to Plant Specifiers***”

2004-2008

Green Roofs for Healthy Cities, Green Roof Professional (GRP) accreditation program.

- develop material for GRP 401 (***Plants and Growing Media***)

SELECT DESIGN PROJECTS

2018-ongoing **Ecological Retrofit of VCC Living Roof**, Vancouver Convention Centre.

Conduct vegetation surveys to assess composition and quality of ten-year living roof. Develop an ecological masterplan to that enhances opportunities for biodiversity, including specifics on management and maintenance.

2017

Private Garden, Crown St., Vancouver BC.

Collaborative design with Randy Sharp, landscape architect. Using celtic spiral as concept, a circular deck hides a difficult concrete pathway. Evergreen native species appropriate to the site are planted in radiating patterns.

2016-2018

Bateman Habitat garden, 56 Norfolk Rd., Sheffield, UK.

Design and install a habitat-rich garden for private clients, including pond, wildflower meadow, habitat structures (invertebrates, mammals), woody plants, and green roof. Included A1 masterplan and appendix with details.

2013-2017

Grey-to-Green Scheme, West Bar, Sheffield, UK.

Member of design team at University of Sheffield Department of Landscape. Support Sheffield City Council on developing design ideas for the ecological retrofit of a ‘grey’ redundant road space into ‘green’ corridor of wildflower meadows, bioswales, rain gardens and pocket parks. Guide Master’s students in developing innovative design strategies and in conveying these graphically.

2011-present

Re-imagining 50 Stokes Croft, Bristol, UK.

Contribute expert knowledge for a custom living wall in Bristol, including substrate composition, species selection and system design.

2006-2007

Vancouver Convention Centre Expansion Project, Vancouver, BC.

Consultant on behalf of NATS Nursery with Rana Creek: native species and peat-free substrate for 6 hectare living roof

2005

O-An Zendo, Julian Woods, PA.

Design and build a small green roof in a forested site.

INTERESTS

- 2018-present Green Roof Info Think-Tank (GRiT), Vancouver coordinator
2018-present Native Bee Society of British Columbia, Board Member and Director-at-Large
2018-present Vancouver Buddhist Centre, Co-leader of Dharma study group, deliver talks
2016-2018 Sheffield Woodland Connections, Co-founder and interpretive guide
2015-present Landscape Research Group (UK), Academic member
2013-present Society for Urban Ecology, Member
2009-present Sheffield Samba Band, Musician
2004-present Greenroofs.com, Contributing Editor
2007-2014 Society for Ecological Restoration, Member
2008 Burns Bog Conservation Society, Volunteer consultant (plant ecologist)
2001 Sierra Club, Outings Leader

PUBLICATIONS

Refereed contributions (R)

- R Thuring, CE and Dunnett, N. (2019). 'Persistence, loss and gain: Characterising mature green roof vegetation by functional composition'. **Landscape and Urban Planning**. 185:228-236.
- R Thuring, CE and Grant, G. (2015). The biodiversity of temperate extensive green roofs: a review of research and practice. **Israel Journal of Evolution and Ecology**. 62 (1), 44-57.
- R Thuring, CE and Dunnett, N. (2014). Vegetation composition of old extensive green roofs (from 1980s Germany). **Ecological Processes** 3 (4). doi: 10.1186.
- R Thuring CE, Berghage, RD, and Beattie, DJ. (2010). Green roof plant responses to different substrate types and depths under various drought conditions. **HortTechnology** 20 (2), 395-401.
- R Berghage, RD, Beattie, DJ, Jarrett, AR, Thuring, CE, Razaei, F, and O'Connor, TP. (2009). Green Roofs for stormwater runoff control. **US EPA Office of Research and Development**, National Risk Management Research Laboratory.

Forthcoming (as of Feb. 2020)

- R Monograph (*submitted for publication*). Thuring, CE. 'Nature as model: Evaluating the mature vegetation of early extensive green roofs'. **Green Infrastructure and Vegetation Science, Future City series**. Konijnendijk, CC. (series editor) Springer. (<https://www.springer.com/series/8178>)
- R Thuring, CE and Dunnett, N. (*in process*). 'Grounded perspective: characterising extensive green roof substrates twenty years after installation.'

Other refereed contributions

- R Thuring, CE. (2014). "Extensive green roof substrates more than 20 years since installation: description and consideration of ecological processes". **Natureparif congress: Society for Urban Ecology**, Paris (June 4-6, 2014).
- R Thuring, CE. (2012). "Ecological dynamics of extensive green roofs over time". **3rd World Green Roof Congress**, Copenhagen (Sept. 18-21, 2012).
- R Thuring, CE. (2011). "Green roof plant communities: syntaxonomy of old green roofs". **1st National Green Roof Student Conference**, Sheffield (May 16-17, 2011).

- R Thuring, CE. (2010). “Calcareous grassland as a model for diverse green roof vegetation: establishment and dynamics”. **2nd World Green Roof Congress**, London (Sept. 15-17).
- R Thuring, CE and Nagase, A. (2006). “Plant responses to drought on extensive green roofs: the effects of temperature, substrate type and substrate depth”. **4th Greening Rooftops for Sustainable Communities conference**, Boston (May 11, 2006).

Non-refereed contributions

- Thuring, CE. (2019). ‘Crows of Vancouver: The Middle Way Between Biophobia and Biophilia’ Essay for **The Nature of Cities**. (March, 2019)
<https://www.thenatureofcities.com/2019/04/26/crows-vancouver-middle-way-biophobia-biophilia/>
- Thuring, CE. (2018). ‘The Sheffield Street Tree Massacre: Notes from a Public-Private Partnership Gone Wrong’. Essay for **The Nature of Cities**. (29 March, 2018)
<https://www.thenatureofcities.com/2018/03/29/sheffield-street-tree-massacre-notes-public-private-partnership-gone-wrong/>
- Thuring, CE. (2017). ‘Trees are more than just trees: the good, the bad, and the ugly’. Essay for **The Nature of Cities**. (28 May, 2017).<https://www.thenatureofcities.com/2017/05/28/21645/>
- Thuring, CE. (2017). ‘Yin and Yang: Urban Ecology and Landscape Architecture’. *One of 26 Writers on Global Roundtable question*: “You say po-TAY-to. What ecologists and landscape architects don’t get about each other, but ought to.” **The Nature of Cities**. (24 Jan, 2018)
<https://www.thenatureofcities.com/2017/01/24/terms-creating-better-cities-ecologists-landscape-architects-lot-common-sometimes-talk-past-perspective-one-critical-idea-profession/>
- Thuring, CE. (2016). ‘Designing ecologically sensitive green infrastructure that serves people and nature’. Essay for **The Nature of Cities**. (28 Sept. 2016).
<http://www.thenatureofcities.com/2016/09/28/ecological-fine-tuning-reaching-ideals-in-green-infrastructure-and-ecologically-sensitive-design/#respond>
- Re-printed in *Biotope City Journal* (26 Oct. 2016).
- Brenneisen, S. und Thuring, CE. (2008). ‘Ökologischer Ausgleich auf dem Dach: Das Dach als Lebensraum’. **NATUR & Land** (Naturschutzbund Österreich) 5 (6): 16-19. (Translation: ‘Ecological Compensation: Roof as Habitat’. Nature and Land, a publication of the Nature Conservation Association of Austria).
- Thuring, CE. (2007). ‘Wet roofs for enhanced green roof performance’. **Green Roof Infrastructure Monitor**. 9 (2): 6-9. Green Roofs for Healthy Cities, Toronto.
- Thuring, CE. (2007). ‘Living roofs for the Pacific Northwest’. **Menziesia**. 12 (2). Native Plant Society of B.C.

Journal Editor

2019 Guest-Editor, “Buildings” (https://www.mdpi.com/journal/buildings/special_issues/Green_Roof)

SPEAKING ENGAGEMENTS

2019

Ecocity World Summit, Vancouver. (Oct. 7-11, 2019). Academic presenter, “Green roofs meet the International Ecocity Standards”.

Portland Ecoroof Symposium, Portland OR (12-14 Sept., 2019). Presenter, “Designing green roofs for biodiversity in the Pacific Northwest”.

Global News 980 CKNW (April 2019), Interview for “Future of Work 2019”.

<https://globalnews.ca/news/5134276/future-of-work-2019/>

Kwantlen Polytechnic University “Branching Out Horticulture Career Expo”, Langley BC (Feb 5, 2019). Invited industry panellist.

Evolution Radio 107.9 (Jan. 2019), Interview, “On The Record”.

<http://bcitnews.com/2019/01/16/for-the-record-christine-thuring>

2018

Vancouver Green Roof Symposium, Vancouver BC (5 Dec., 2018). Presenter, “Extensive green roof performance in the Pacific Northwest”.

BC Homebuilders Association. The Trev Deeley, Vancouver BC (29 Nov., 2018). Invited speaker, “Net Zero and Zero Discharge Homes”.

2017

102nd ESA Annual Meeting: Ecological Society of America, in Portland OR. (Aug. 6-11, 2017).

Oral Session 12916 on Designed Urban Ecosystems as Habitat for Biodiversity: Beyond the Low-Hanging Fruit. Academic speaker, “Linking vegetation dynamics on extensive green roofs to ecological theory.”

Designing with Nature: World Green Infrastructure Congress, in Berlin. (June 20-22, 2017).

Academic speaker, “Nature as model: characterising mature green roof vegetation 20-30 years after installation”.

GreenInUrbs: Nature based solutions for sustainable and resilient cities, in Orvieto, Italy. (April 4-7, 2017). Academic speaker, “Causes, mechanisms, filters and feedbacks: a successional model for predicting vegetation dynamics and community assembly on green roofs over the long term”.

2015

Greenroofs and Walls of the World Virtual Summit 2015. Speaker @ Inspiration Nook, “Soil Ecological Processes on Green Roofs: Research and Observation Meet Theory and Intuition” (Greenroofs.com).

Public Lecture (as part of Faculty Chair search at *Ecole Polytechnique Fédérale de Lausanne*), in Lausanne, Switzerland (April 21, 2015). Academic speaker, “Soils & Plants, Cities & People: Urban Ecological Design for a Sustainable Future”.

2014

Natureparif congress: Society for Urban Ecology, in Paris. (June 4-6, 2014) Academic speaker, “Extensive green roof substrates more than 20 years since installation: description and consideration of ecological processes”.

2013

1st World Congress of the Society for Urban Ecology, at Humboldt University in Berlin. (24-27 July, 2013). Speaker, “Ecological dynamics of old green roofs”.

1st World Congress of the Society for Urban Ecology, at Humboldt University in Berlin. (24-27 July, 2013). Academic speaker, co-present with Mark Simmons (Lady Bird Johnson Wildflower Centre), “Upping the Urban Green: What is the actual and potential role of ecology in our cities?”

Green Roof Gathering by Green Roofs for Healthy Cities, in Toronto ON (9 April, 2013) Featured speaker, “UN Decade on Biodiversity: opportunities for the green roof industry”.

University of British Columbia School of Architecture and Landscape Architecture, Brown Bag Lecture Series, in Vancouver BC (27 March, 2013). Visiting speaker, “Preliminary findings on plant and soil development on extensive green roofs over time”.

The Green Roof Research Conference: Bringing together the world’s leading green roof scientists, at The University of Sheffield UK (18-19 March, 2013). Speaker, “Dynamics of green roof vegetation over time”.

Greenroofs and Walls of the World Virtual Summit 2013. Speaker, “Ecological dynamics of old green roofs” (Greenroofs.com).

2012

World Green Roof Congress, in Copenhagen DK (19-20 Sept., 2012). Academic speaker, “Ecological dynamics of old green roofs”.

2011

PG Café Forum, at The University of Sheffield UK (24 May, 2011). Speaker, “Ecological trends on old green roofs”.

Green Roof Research Students Conference, at The University of Sheffield UK (16 May, 2011). Speaker, “Green roof plant communities: Syntaxonomy of old green roofs”.

Greenroofs and Walls of the World Virtual Summit 2011. Moderator and panelist, ‘Biodiversity and green roofs’. (VS2011 #25) (Greenroofs.com).

2008

6th Greening Rooftops for Sustainable Communities conference, in Baltimore (USA) (25 May, 2008). Panelist, ‘Future directions for green roof research’.

2007

Light House Sustainable Building Centre, in Vancouver BC (3 Nov, 2007). Invited speaker, “Living architecture and ecological design”.

Vancouver Natural History Society and Native Plant Society of B.C., Special lecture (27 Sept, 2007). Speaker, “Living roofs for the Pacific Northwest”.

2006

4th Greening Rooftops for Sustainable Communities conference, in Boston (USA) (10 May, 2006). Academic speaker, co-present with Ayako Nagase, “Plant responses to drought on extensive green roofs: The effects of temperature, substrate type and substrate depth”.