DECEMBER 2018

SITELINES

Landscape Architecture in British Columbia

Creating Resilience Through Adaptation

Professional Responsibility in a Changing Climate | Toolbox for Adaptation: How to Get Started | More Trees Please: Adapting to Changing Climate in Metro Vancouver | The Importance of Professional Collaboration in Climate Action | Siloed Systems, Common Objectives: How a Multidisciplinary Approach to Climate Change Can Reduce Health Risk | The Adaptation Primers | In Memory of Don Wuori

DOMINO PARK

An intricate web of belting, nets, and climbers inspired by the historic sugar factory in Brooklyn

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Sitelines is published six times per year; February, April, June, August, October, and November by the British Columbia Society of Landscape Architects and is mailed to all BCSLA members, registered landscape architects, associates and affiliates. The editorial deadline is the 8th and advertising is the 16th day of the intervening months. Advertising rate information is available on request. Inquiries regarding editorial, advertising, or other issues should be addressed to the Sitelines Editor, c/o the BCSLA at the above address. To view the full-colour version of Sitelines, please visit www.sitelines.org.

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CREATING Resilience THROUGH Adaptation

By Bev Windjack, MBCSLA, AALA, CSLA, ASLA, LEED® AP BD+C, ERPSC

As 2018 draws to a close I like to believe that landscape architects across BC are using their expert knowledge, and design and policy making opportunities, to build resilience into the communities where they live and work. It is a mandate of the CSLA and, as you will read in this issue, a professional 'Standard of Care' obligation. Incorporating adaptation strategies is not an optional service but, rather, a tenet of good design. The good news is that both the associated professions that landscape architects regularly work with (e.g. planners, engineers, architects, foresters, biologists, arborists and agrologists), and those we don't connect with quite as often (e.g. health care professionals, accountants), are keen to collaborate with BCSLA members to develop and implement adaptation strategies that lead to resilient communities, and environmental and human well being. Further good news is that adaptation/resilience resources and tools are readily available through BC organizations such as the BC Climate Action Secretariat, the Fraser Basin Council, and the Pacific Climate Impacts Consortium (PCIC), and nationally through agencies such as the CSLA, the Prairie Climate Centre at the University of Winnipeg, and Health Canada and Natural Resources Canada, to name just a few.

I have the great privilege of representing the BCSLA on PAAWG (BC's Professional Associations' Adaptation Working Group) and of working with colleagues across the country on the CSLA's Committee on Climate Adaptation. Both groups comprise bright, highly motivated professionals, who recognize the challenge of not having both a multidiscipline professional and a community accessible common language around adaptation and resilience. I found it interesting that in the first few hours of a symposium I attended in early November, the same concern was raised regarding climate change and academics and public/private sector individuals working in the health sector. Developing a shared language around adaptation and resilience seems desirable and I believe landscape architects are particularly well positioned to take a leading role in this effort. As Johanna Wolfe, friend and Associate Director of Climate Risk Management at Climate Action Secretariat, BC, has pointed out "landscape architects have the potential to be the glue that brings the associated professions together because landscape architecture touches, or bumps up against, everyone else's area of expertise." SL

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1. Personal conversation with Johanna Wolfe, BES, MSc, PhD

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Cover photo: Bev Windjack

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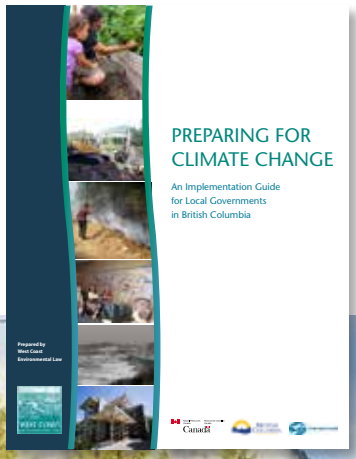
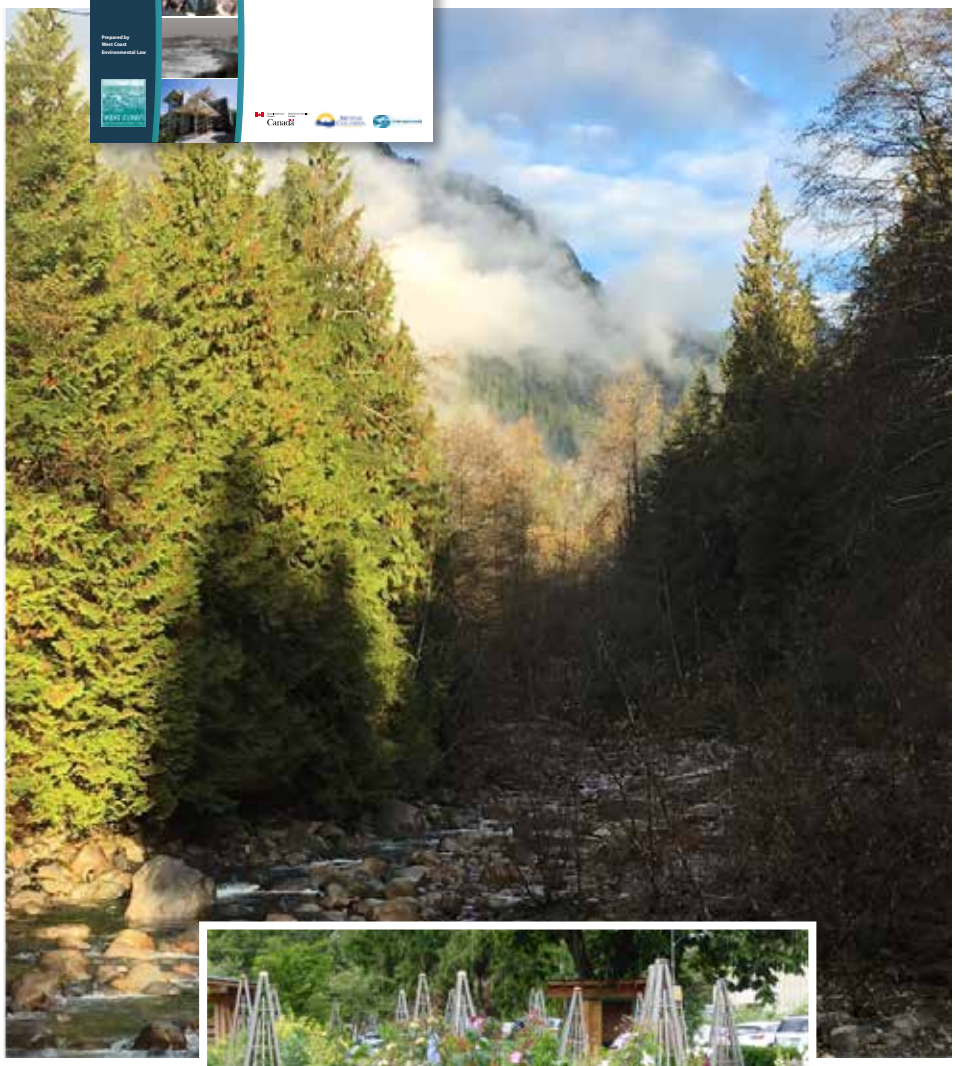
Professional Responsibility in a Changing Climate

By Deborah Carlson, B.C.L, LL.B, Staff Lawyer,
West Coast Environmental Law



Last year more than 15,000 scientists (including more than 500 from Canada) joined together to write an open letter warning that we need to take better care of the planet.[1] They noted that climate change is among the "foreseen environmental challenges facing us all."



At a policy level, we are seeing action. Since 2016, Canada has a Pan-Canadian Framework on Clean Growth and Climate Change. In BC, many local governments have already developed climate action plans and strategies, and have spent time, and money, learning about the ways that climate change will affect their communities. Many of them have also set targets to reduce their own GHG emissions, and some are starting to develop climate adaptation strategies.

Recent events in BC, including wildfires and floods, along with more incremental, but steadily growing concerns like hot, dry summers and invasive species foreshadow the climate impacts that will become more severe over the course of this century.

The bottom line is that we need to get on with the work of on the ground implementation. And this is where landscape architects come in. This is not just about disaster preparedness and recovery, it's about shifting our built communities towards practices that make us more sustainable, less vulnerable, and more connected to nature. Making this happen, on the ground, is a site by site endeavor in which landscape architects have key professional responsibilities and opportunities.

Climate change, professional risk and liability

Understandably, professionals are interested to know if climate change exposes them to new risks in their area of practice. Legal claims brought against professionals are usually based on assertions of "negligence" or on failure to meet contractual obligations. Every case turns on its facts, as lawyers like to say, but there are some general principles to keep in mind.

People engage professionals because they can offer specialized advice and expertise, and the courts have recognized the responsibility that professionals have in this relationship. In evaluating whether a professional was negligent, the courts consider existing professional practices and standards, as a measure of what was reasonable in the circumstances. However, our Supreme Court has also suggested that there may be circumstances where standard practice is no longer reasonable.[2] This is important to consider in the context of climate change, where professional standards, based on historical data and experience, might be lagging behind science about future climate projections.

Increasingly climate models are available to get an idea of how specific regions will change. Where there is existing information, landscape architects will likely be expected to take into account information about changes in precipitation, temperature and other relevant climate impacts.[3]

To date we have not seen any specific litigation in BC around professional liability related to climate change, but there will likely be cases as climate impacts become more severe in coming decades. Prudent practitioners should ensure that they are adequately informed about aspects of climate change and climate action relevant to their advice and designs. The May 2018 position paper from the Canadian Society of Landscape Architects[4] recognizes this reality by committing to ensure that emerging science is incorporated into accredited training programs, and reflected in professional guidance and continuing professional development.

Connecting to nature and building resilience, site-by-site

A recent report[5] prepared for the American Society of Landscape Architects outlined ways that the green and blue parts of urban areas can contribute to climate resilience and healthy communities:

- Habitat for pollinators supports biodiversity and food security;
- Riparian buffer areas protect fish in streams and can lessen flood risks;
- Trees provide shade and air quality benefits, and also sequester carbon;
- Networks of parks and green areas provide opportunities for recreation, self-propelled transportation, and habitat connectivity; and
- Green infrastructure, including green roofs, bioswales and soil management help manage run-off and reduce pollution in waterways.

Image:
(Rainfall Landscaping) Heavy rainfall events will become more frequent/ intense in parts of BC

All images: Deborah Carlson.

Images on facing page:

Natural systems offer lessons about resilience

Inset image: Community Gardens are a part of our green urban networking

As part of the design team for the sites that make up these areas, landscape architects will need to be aware of climate impacts, and how these will affect plants and animals. For example, different rainfall patterns, hotter, drier summers, and invasive species will shape design and ongoing maintenance needs. Non-professionals may not be versed in climate impacts, but they will be relying on landscape architects to produce designs and projects that will thrive in future conditions.

Metrics – meeting objectives and telling the story

Understanding our vital links to nature, even in urban settings, means that blue and green areas in our communities will be seen less as "spaces" and more as active systems that are providing beneficial services. As regulators begin to implement climate strategies and policies, they will be translating broader goals around climate adaptation, greenhouse gas reduction, and social equity into more specific regulatory objectives.

Specifying certain types (e.g. xeriscaping) or species of vegetation (e.g. trees suitable for future climate), setbacks (e.g. riparian buffers) and performance measures (e.g. amount of impermeable surface) are some examples of existing objectives, expressed in zoning and permitting, but further objectives are likely to emerge as the need to address climate change becomes more pressing. An urban design project in Manhattan establishing a network of community gardens is exploring how 13 strategies (e.g. wetlands, bioswales, pollinator gardens) contribute to 12 functions e.g. (filtration, drainage, cooling, ecological), using monitoring that includes citizen science and online scorecards.[6]

Along with other professionals, landscape architects will be working within this evolving regulatory environment. At the same time, they have an important role to play in using their expertise and insights about working with natural systems and collaborating with other professionals to help develop new regulations. The ability to communicate and engage the broader public will also be valuable.

For landscape architects climate change presents obvious challenges, but it is also an opportunity to help shape more resilient and healthier communities. SL

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4. http://www.csla-aapc.ca/sites/csla-aapc.ca/files/Advocacy/CSLA%20Position%20Paper%20Climate%20Change%20FINAL%20en.pdf
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6. www.gardensrising.org

TOOLBOX FOR ADAPTATION:

How to Get Started

By: Eliana Chia, MA (Community and Regional Planning), Fraser Basin Council

LANDSCAPE ARCHITECTS AND THE RETOOLING FOR Climate Change Resources

With the release of the recent IPCC special report, alarm bells are ringing that adaptation action is needed urgently and in a shorter timeframe than we previously anticipated. We now know that at the present rate of GHG emissions, we can reach a 1.5°C increase in global temperatures in as little as 11 years. The 1.5°C benchmark, formerly an optimistic target, will still result in stronger storms, dangerous heat waves, rising seas and largescale disruption to infrastructure. We are certain about the need to adapt – so the next question is how? And what role can landscape architects play? The *ReTooling for Climate Change website* helps practitioners plan for climate change as it makes adaptation guides, tools and case studies readily accessible. In this article, we share some questions professionals may have as they start thinking about adaptation and the key resources from the ReTooling website to help answer these questions.

What are the climate science basics that I should understand? How does climate modelling work?

If you're looking for an introduction to climate science, a valuable resource is *Climate Insights 101*, which is a free online interactive course from the Pacific Institute for Climate Solutions. Designed for a wide audience, Climate Insights 101 offers 11 mini-lessons through videos and test-your-knowledge quizzes that introduce the basics of climate science, the impacts of climate change in BC, and adaptation and mitigation actions in our province and elsewhere.

What are the climate projections for my region?

The *Plan2Adapt tool* by the Pacific Climate Impacts Consortium generates maps and data describing projected future climate conditions, organized by BC regions. This tool helps practitioners to better understand how climate will change in their area and which sectors will be impacted. Projection information for temperature and precipitation changes, shifts in growing degree days (the heat energy available for plant growth) and changes in frost-free days is available for the 2020s, 2050s and 2080s.

What are the tools that local governments can use to implement adaptation?

The *Preparing for Climate Change: An Implementation Guide for Local Governments in BC* identifies the tools that local governments can use to implement adaptation strategies. Increasing community resilience engages a wide range of existing local government services and jurisdiction, including land use planning, transportation, infrastructure, emergency response, community services and asset management. This guide provides concrete examples of adaptation strategies, drawing on case studies of local governments in BC.

Image facing page:
Forest wildfire.

Image top:
Heavy rainfall in public park

Image bottom:
Wooden jetty during storm

How can I design coastal landscapes to adapt to sea level rise?

With a predicted 1 metre of sea level rise by 2100, we can expect coastal hazards such as coastal erosion, changes to coastal habitats, coastal inundation, as well as more frequent and intense storms. The *Sea Level Rise Adaptation Primer* provides an overview of 4 different adaptation strategies and 21 adaptation tools, which practitioners can evaluate for their local adaptation options.

Pro Tip: Especially significant for landscape design, the primer includes soft armouring measures like the creation or restoration of wetlands, building sand dunes, and beach nourishment.

How can natural or "green" infrastructure help adapt to climate change?

Natural infrastructure, such as ponds, wetlands and vegetated areas, can play a vital role in flood mitigation and is a strong complement or viable alternative to grey infrastructure. The *Combatting Canada's Rising Flood Costs: Natural infrastructure is an underutilized option* report highlights a framework for assessing the business case for natural infrastructure investment and an implementation process for natural infrastructure projects.

Pro Tip: Look at the case studies of communities who have assessed the value of natural assets and engaged in restoration projects.

Can the design of urban forests and tree planting help maximize climate adaptation?

Metro Vancouver acknowledged that regionally-specific information on how to design tree plantings to maximize climate adaptation benefits has been limited, so they developed the *Design Guidebook: Maximizing Climate Adaptation Benefits with Trees.* The guidebook is meant to be a quick reference for land managers to support landscape design projects, design guidelines updates and best practices for designing new developments.

How can I communicate about the impacts of climate change on a landscape?

A powerful climate change communication tool is landscape visualization. The Collaborative for Advanced Landscape Planning (CALP) at UBC created the *Local Climate Change Visioning and Landscape Visualizations Guidance Manual* to offer a guide for visioning, developing scenarios and producing 3D visualizations for climate change planning. The manual walks readers through the steps of their participatory processes and visualization techniques, with case study examples.

Pro Tip: CALP has also created *training* ►

modules that allow users to develop their local scenarios and determine visualization media and production methods.

These are only a small selection of the wealth of tools, guides and resources available on the ReTooling for Climate Change website. Practitioners can browse its adaptation resources according to topic, such as ecosystem, storm water, building, or infrastructure — or they can browse according to resource type, which includes case studies, audio-visuals, plans and reports. There is also a ReTooling community of professionals that practitioners interested in adaptation can join. ReTooling regularly hosts webinars and workshops where professionals can meet their peers and share their experiences with addressing climate impacts. Start by *subscribing* to the ReTooling newsletter and stay connected to news, opportunities and events related to adaptation! SL

1. www.retooling.ca
2. www.retooling.ca/cgi/page.cgi/Climate_Insights_101_Climate_Science_Basics-r275?_id=105
3. https://pacificclimate.org/analysis-tools/plan2adapt
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10. https://secure.campaigner.com/CSB/Public/Form.aspx?fid=1580590

MORE TREES PLEASE:

Adapting to Changing Climate in Metro Vancouver

By: Dr. Katherine Dunster, MBCSLA, R.P. Bio.

"If you are doing any planting design or planning any project that involves plants, YOU need to adapt."

— K. Dunster, MBCSLA, R.P. Bio.

The title of this article begins with "more" for a thoughtful reason. More, means much more than many, an increase in quantity, or a greater amount. More as a noun refers to the root of a tree or plant; the fibrous roots of a tap root. As a noun, more is a word we use to label a manner, custom, or tradition. Climate adaptation is all about changing the manners, customs, and traditions deeply embedded in landscape planning and design. To quote Dorothy in the Wizard of Oz, 'Toto, I've a feeling we're not in Kansas anymore.' So get woke.

Climate

The climate is changing, all over the province, wherever you are practicing. Environment Canada (2018) has recently refined the weather reporting regions for BC, subdividing larger regions such as Metro Vancouver, into sub-regions that reflect differences such as latitude, elevation, proximity to mountains, rain shadows, and the coast, which influence the weather (Figures 1 and 2). Weather stations for the new sub-regions contribute deeper data and provide useful guidance for fine-tuning plant selection across the entire region, now and going forward. For example, annual rainfall on the North Shore is twice that in Delta, which along with the soil environment, should result in two completely different plant palettes. To sum up, **More #1** — Cookie cutter planting design has to be extirpated from every studio.

Climate Projections to 2050

Climate projections in the Metro Vancouver region include warmer temperatures and more extreme weather events as the next three decades unfold (Metro Vancouver

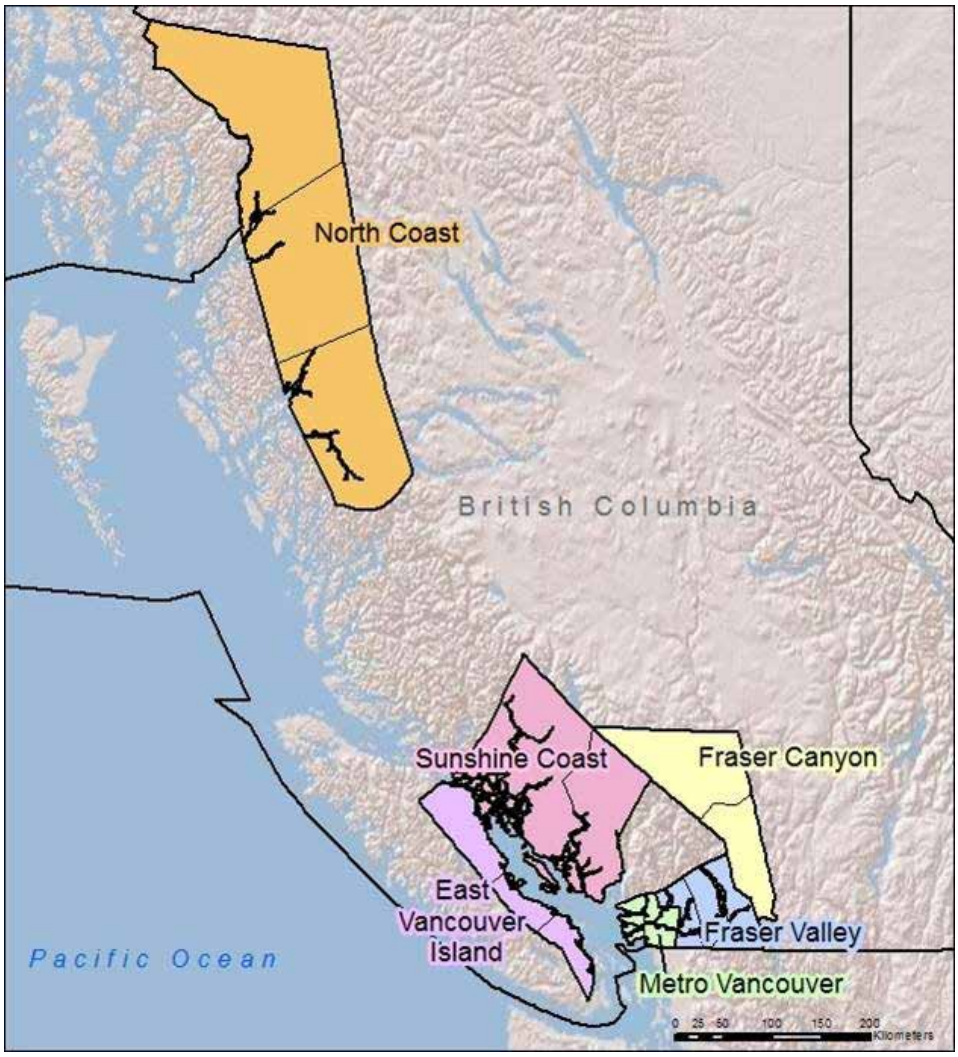

Figure 1. New BC climate forecast regions (Source: Environment Canada)

2018). The seasons are changing, and quite possibly we may end up with two: Dry and Wet. We are already experiencing longer, hotter, drier summers, while the rainy seasons will be warmer and wetter with decreased snowpack and increased liquid precipitation. By the 2050s, threshold spring temperatures could be witnessed 1-3 weeks earlier than at present. Practically speaking, this has significant effects and consequences for such events as Cherry Blossom Festivals, or Daffodil Festivals, both in terms of moving dates, as well as finding species and cultivars that bloom earlier.

On top of the local changes in weather we must adapt to, climate science predicts the Salish Sea that washes ashore in our Metro Vancouver coastal communities will rise in Metro Vancouver by at least one metre by 2100 due to global ice melt. Keep in mind that without significant mitigation efforts and significant financial investment, a single degree C rise globally will result in a two-metre sea level rise on the South Coast (Climate Central 2018), putting many places where we currently live, work, and play under water.

More #2 – All our design work should be thinking unselfishly about local climate refugees and their relocation to safe sites for permanent refuge. If there is no more room to accommodate additional population growth due to gradual or sudden evacuation from flood-prone areas without compromising local food production and ecosystem services, then we need to be thinking today about New Towns in higher and drier locations outside the region.

Why do we need more trees?

The urban heat island (UHI) effect is expected to be intensified as a direct result of ever-increasing temperatures, especially during the summer. This results in environmental threats to human health and well-being. The UHI effect is the regional phenomenon creating significantly warmer inner cities than nearby suburban and rural areas. The heat is caused by energy created from buildings, paved surfaces, people, and transportation. According to the US EPA the annual mean air temperature of a city with 1 million people or more can be 1–3°C warmer than its surrounding areas, and in the evening the difference can be as high as 12°C as heat absorbent surfaces release and radiate heat.

Data on using trees as an effective UHI management and mitigation partner comes from New York City, where their 2006 Regional Heat Island Initiative noted that trees and the urban forest, along with living roofs and light surfaces, are an effective adaptation strategy to lessen UHI temperatures. We know though that shading by trees does not result in regional cooling because similar amounts of short wave radiation are absorbed by trees, shrubs, grasses and forbs, even though they intercept it at different heights. ►

What we do know is that unlike plants of shorter stature, trees provide shade. Tree shade intercepts or reflects health-harming ultra-violet (short-wave) radiation. Under a tree canopy, people feel cooler and buildings are cooler because the canopy prevents short-wave radiation from heating external walls, roofs, and penetrating windows. What trees should we use, and how we should adapt the composition of the urban forest to better adapt to changing climate is a huge topic that will be addressed in another article.

Adapting for Human Health and Well-being

The BC Centre for Disease Control (BCCDC) attributes extreme heat events in Metro Vancouver to directly affecting human health and well-being; they estimated 114 additional deaths during a 5-day extreme (for Vancouver) heat event in Metro Vancouver in the summer of 2009 (Kosatsky et al 2012). That's 114 deaths that could have been mitigated by cooling down the city and region, and something landscape architects must take note of. Environment Canada defines a heat wave as more than three consecutive days with temperatures in excess of 32°C, which is less common near the coast, and more frequent inland.

By the 2050s Metro Vancouver will have more than twice as many (43 days) summer days above 25°C compared to today (18 days). In 2018, much of the latter half of July and first half of August had maximum recorded temperatures above 25°C in Vancouver, and above 30°C further east in the Fraser Valley, and in many cases was 1° to 3+°C above the previous 10-year averages. A recent document from the BCCDC (Lubik et al 2017, p 24) indicates that our work is essential to providing long-term solutions and strategies to help communities adapt to extreme heat events; very few have developed comprehensive plans to date.

More #3 – Take to heart and apply BCSLA Object a) to uphold public health, safety and welfare as it relates to the professional practice of landscape architecture in BC, by using our knowledge, skills, and experience to design, plan, and adapt landscapes to remove the real threat of increased illness and mortality triggered by extreme heat events. **SL**

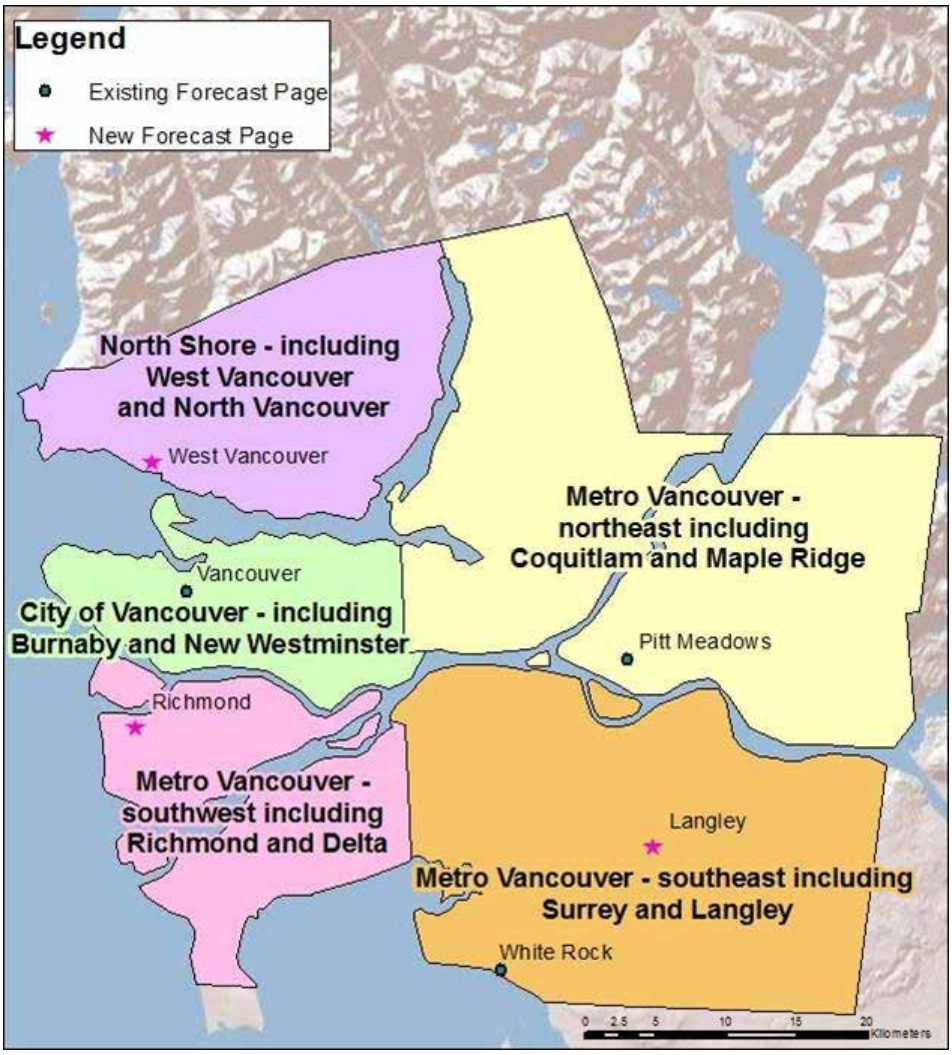

Figure 2. New Metro Vancouver forecast regions (Source: Environment Canada)

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THE IMPORTANCE OF Professional Collaboration in Climate Action

By Harshan Radhakrishnan, P.Eng., Practice Advisor,
Engineers and Geoscientists BC

Engineers and Geoscientists BC, the regulatory body for engineers and geoscientists in the Province has the mandate to establish, enforce and maintain standards of practice for its over 35,000 professionals.

With an eye to a sustainable future, the association has developed position papers on both adaptation (*Evolving Responsibilities for Engineers and Geoscientists*, 2014)[1] and mitigation (*Human Induced Climate Change*, 2016)[2]. In terms of professional collaboration, it is useful to note that the position papers were the result of collaboration across members' disciplines with extensive consultation, as well as participation from the Ministry of Environment and Climate Change Strategy and the Climate Action Secretariat. The sum of what has been communicated through these papers is as follows:

Engineers and Geoscientists BC accepts that there is strong evidence that human activities, in particular activities that emit greenhouse gases, are contributing to global climate change.

The association commits to raising awareness about the potential impacts of the changing climate as they relate to professional engineering and geoscience practice, and to provide information and assistance to members.

The association states that members have the potential to influence greenhouse gas emissions and build resilience through their professional activities, and are expected to consider the impact of their work on the climate.

Within the association's mandate, there are a number of ways in which Engineers and Geoscientists BC collaborates to promote good professional practice. These include, (but are not limited to):

Engineers and Geoscientists BC has an evolving portfolio of practice guidelines on the topic of climate change adaptation and mitigation to support its members, including:

ACTIVITY	COLLABORATION EXAMPLE
Offering continuing professional development events	Collaborated with legal consultants to deliver workshops to professionals on climate-related legal risks
Maintaining an active and frequently updated climate change information portal	Collaborated with BC climate scientists to develop a caveat for the use of a popular desktop tool that considers climate change in generating Intensity-Duration-Frequency Curves
Developing climate related content at conferences	Collaborated with the Association of BC Forest Professionals in delivering a presentation on the perspectives of foresters; collaborated with the Association of Professional Biology in presenting about Engineers and Geoscientists BC initiatives
Developing professional practice guidelines	Collaborating with BC Ministry of Transportation and Infrastructure and Engineers Canada in developing adaptation specific guidelines; collaborating with the Architectural Institute of BC in developing guidelines specific to the buildings sector focussed on energy efficiency and GHG mitigation
Engaging stakeholders	Collaborating with groups and organizations such as the Professional Association Adaptation Working Group, the Climate Risk Network, Climate Change Adaptation Community of Practice, and the BC Energy Step Code Council

Professional Practice Guidelines – Legislated Flood Hazard Assessments in a Changing Climate in BC (adaptation focused)

Professional Practice Guidelines – Developing Climate Change Resilient Designs for Highway Infrastructure in BC (interim adaptation focused guidelines, to be finalized in 2019)

Professional Practice Guidelines – Whole Building Energy Modelling Services (energy efficiency and GHG mitigation focused)

Professional Practice Guidelines – Sustainability (addresses both adaptation and mitigation)

Engineers and Geoscientists BC actively participates in dialogue that shapes public policy by providing feedback on the Environment and Climate Change Canada *Discussion Paper on Strategic Assessment of Climate Change*[3] and on the BC Government's *Intentions Paper on developing a long-term clean growth strategy*[4]. Engineers and Geoscientists BC also provides input into the development of white papers by Engineers Canada on *Principles of Climate Change Adaptation and Mitigation for Engineers*[4,5]. By engaging in national and provincial projects, the association supports the development of codes and standards. For example, the BC Energy Step Code, BC Housing's Mobilizing Building Adaptation and Resilience Project, and Natural Resource Canada's Coastal Flood Risk Assessment for Climate Resilient Buildings and Infrastructure Framework.

It is becoming clear that collaboration between the various professional associations will be increasingly important as we move forward. The BC Government recently introduced the *Professional Governance Act*[6]. This new legislation sends a strong signal that professional regulators must now, more than ever, work together to uphold the professional reliance model with our changing climate.

We understand that the solutions considered appropriate for the future have to meet multiple objectives (innovation, affordability, GHG reduction, community acceptance, resilience, etc.) and professionals will have to do the balancing act of trying to meet these competing objectives while delivering on their projects. Strategies relevant to all professionals who support land-use decisions are needed. These strategies are often called green infrastructure implementation strategies, but they are also ▸

known by alternative names such as managing municipal natural assets, ecosystem-based services, and respecting natural features/ cultural forms. These strategies have multiple co-benefits (including reduced GHG footprint) and fit well within the various strategies for adapting to climate change.

There are many opportunities available to engage and learn different approaches from each other to make better land use decisions. One such opportunity is the *BC Land Summit 2019*[8] *where* these and other important topics will be discussed.

Engineers and Geoscientists BC has become an allied partner along with multiple professional associations, including the BC Society of Landscape Architects (a member of the BC Land Summit Society organizing the Summit), to host the summit, and commits to supporting discussions relevant to climate change adaptation at the event. We look forward to collaborating with professional members of the BC Society of Landscape Architects at the *BC Land Summit 2019* as well as at other professional development events relevant to adaptation and sustainability.

Editor's note: all BCSLA members can access EGBC's web portal and take advantage of their research and learning opportunities by simply going to 'EGBC portal' and making an account. It's worth it! SL

1. Evolving Responsibilities for Engineers and Geoscientists: https://www.egbc.ca/getmedia/a39ff60e-80a1-4750-b6a5-9ddc-1d75248a/APEGBC-Climate-Change-Position-Paper.pdf.aspx
2. Human Induced Climate Change: https://www.egbc.ca/getmedia/33cce5c7-f7ab-4752-a398-4ca6e2c6dee3/Position-Paper-Final-2016.aspx
3. ECCC Discussion Paper on Strategic Assessment of Climate Change: https://www.strategicassessmentclimatechange.ca/5637/documents/11224
4. BC Government's Intentions Paper on developing a long-term clean growth strategy: https://engage.gov.bc.ca/cleangrowthfuture/intentions-papers/
5. EGBC Feedback: https://www.strategicassessmentclimatechange.ca/5637/documents/11673
6. EGBC Feedback: https://engage.gov.bc.ca/app/uploads/sites/391/2018/09/Engineers-and-Geoscientists-BC.pdf
7. Professional Governance Act: https://www.leg.bc.ca/parliamentary-business/legislation-debates-proceedings/41st-parliament/3rd-session/bills/first-reading/gov49-1
8. BC Land Summit 2019: https://www.bclandsummit.com/

As a follow up to the motions made at the 99th AGM of Engineers and Geoscientists BC, the association has embarked on the development of a comprehensive Climate Change Action Plan that will provide direction on the roles and duties of EGBC's members in addressing climate change. The Climate Change Action Plan is expected to be completed in 2019 and will set the tone for initiatives that the association would take to support its membership.

SILOED SYSTEMS, COMMON OBJECTIVES:

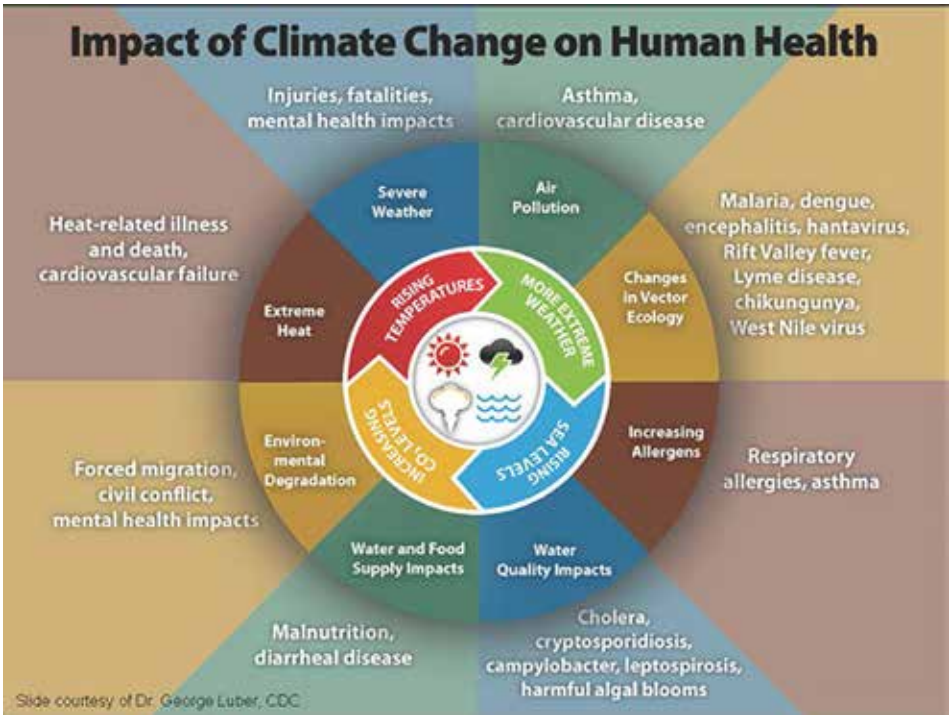
How a Multidisciplinary Approach to Climate Change can Reduce Health Risk

by Olivia Lyne, BN, MLA, Landscape Designer at LADR Landscape Architects

The problem

In an age where food comes from the grocery store, furnaces warm us in the winter, and water comes out of a tap, it's easy to forget that our insistence on manipulating our environment to accommodate our survival was the original intention behind design interventions. Though we have evolved to maintain a distance from our natural surroundings through creation of the built environment, the changing climate provides an opportunity to reframe our views on the relationship we have with our

surroundings and the relationship between health and design. Resilience and adaptability are not just adjectives that describe good design; these words describe objectives for human health as well. Though we currently rely on a system of categorization and siloed expertise, the common objective remains to thrive and survive. As the risks associated with climate change and the subsequent impact on human health becomes more pronounced " (t)he question is whether this forced refocusing of designers' attention means marginalisation or the discovery of new opportunities?" (Veeken, C. v. d. et al., 2013, p. 90). Dependence on divided competence prevents professionals in both health and design from obtaining and evaluating common objectives and creating a "symphonic vision." (Veeken, C. v. d. et al., 2013, p. 43). When considering the broader issue of climate change, and its impact at the individual, community, regional, and global scales it is essential that "representatives from the various disciplines are more committed to solving the problem than to being academically correct...(t)hey will have to...be willing to be taught, by each other and the system." (Meadows, D., n.d.). Collaboration between health professionals, design professionals, and the public, united under a common objective as multifaceted problem solvers is necessary to mediate the effects of climate change. King (2017) states, "(a) building is a device for protecting human beings, and as such is comparable to, among many examples the shell of a crab,...or the bark of a tree. Though we tend to think of buildings as static objects, they have never been anything of the sort" (p. 127). In the face of environmental uncertainty the complex systems that make up our built environment should be constructed to reflect values associated with survival and resilience.



A multisystem, multi-scale approach

If we step back from economics and cost-benefit in monetary terms, it allows for the opportunity to consider humans and their relationship to their surroundings within the context of achieving optimal results for health and survival in the present and for future generations. Siloed systems can lead to deferred responsibility and accumulation of preventable system overloads and ultimately adverse health outcomes. For example, consider extreme temperature conditions, one of many issues caused by climate change. A building is improperly sited and designed to rely on mechanical interventions to manage the temperature. The inhabitants either can't afford to pay the necessary heating or cooling bills, or, as a cost saving measure, individual thermostats are not installed. Sadly, this is common in increasingly prolific high density building typologies such as apartments (Stats Canada, n.d.). Subsequently, chronic or acute health conditions develop, sometimes resulting in death such as the 156 deaths directly attributed to an extreme heat event in BC in 2009. (Guilbault, S. & desLibris, 2016, p. 29) Finally, this causes increased hospital intakes and overloading of healthcare infrastructure. The intrinsic connection between the potential for the built environment to regulate health outcomes of inhabitants is a missed opportunity in most cases resulting ►

in the failure of both systems. A more integrated approach between health and design, and commitment to prevention within a broader more complex system, generates increased resilience. Complex problems require a multidisciplinary problem solving approach. As Bettencourt & Geoffery point out, "some scholars argue that critical urban issues [be] treated as independent issue… this frequently results in ineffective policy and often leads to unfortunate and sometimes disastrous unintended consequences" (Bettencourt & Geoffery, 2010, as cited in Jabareen, Y., 2013, p.2). Meadows (n.d.) states, "(i)nstead of becoming a champion for one possible explanation or hypothesis or model, collect as many as possible. Consider all of them plausible until you find some evidence that causes you to rule one out." Collaboration at a policy level that includes the strongest to the most vulnerable individual can result in flexible and inclusive policies and designs rooted in the larger set of circumstances, allowing us to more clearly identify what we are taking from and providing for the future. As climate change evolves and the environment increasingly becomes a "coherent chaos of fluxes" design strategies for adaptation and evaluation reflecting a more comprehensive definition of value and capital are required (Veeken, C. v. d. et al., 2013, p.91).

The imperative of strategies which generate resilient systems

Use of design strategies such as passive design, sustainable landscape management, preservation and enhancement of ecosystem services, design for the comfort and well being of people, and careful selection of natural and ethically sourced building materials are key ways to express and direct values beyond financial capital in the built environment. Though frequently challenging to get these strategies embedded in design programs, it is our responsibility as professionals (and upcoming professionals) to advocate until we succeed. It is essential to acknowledge the impact on individual and collective health and wellbeing in the creation and construction of our surroundings. Deeper understanding of the relationship between humans and the built and natural environment calls for combined health and design expertise in consultation with the public, ultimately enhancing our ability to adapt to the inevitable change happening around us. SL

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The **Adaptation** Primers

By: Alexander J. Clarke, O.C.T.

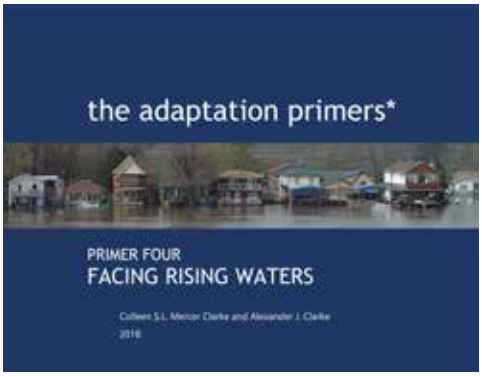
In my experience, any discussion of climate change is confounded by the scale of the issue. Climate change is a global challenge, affecting everyone in myriad ways. And there seems to be an implicit assumption that the response must be an organized, global policy approach. An attempt to take the time to find the "right solution", and to identify who should be held responsible for implementing it. While that's a reasonable idea in most circumstances, we are running out of time.

So what is the right approach? Don't wait for organization. This is a problem that we *created* without organization. The state of the world's climate is the result of decades of collective human activity. Perhaps unsurprisingly, that's the solution. Decades of collective human activity. Rather than most of us contributing, just a little bit, to the problem, just shift our individual actions enough that we each contribute just a little bit to *solving the problem.*

To stop looking for the people who can fix the problem for us, and instead, ask "What can I do to help?"

Shifting global patterns of activity is never easy. It is, however, eminently achievable, one person at a time, with small groups working for change. How can I be so certain? We got into this because of exactly that kind of shift in human behavior, starting in the Industrial Era. There was no grand international agreement to push civilization towards using personal internal-combustion vehicles. It was a shift produced through millions of individual choices. Choices which weren't looking at any grand scale, but just in making things better for themselves. This is a hole we dug ourselves into. We can dig ourselves out. We just have to agree that we should all start digging.

It means that we, every one of us, needs to start to take stock of what we can do to help drive this shift in thinking, and in activity. It was this drive, this need to find some means of nudging the paradigm, that led to my involvement as a co-author of The Adaptation Primers; a set of four documents published with the Canadian Society of Landscape Architects in September 2018. I have worn too many hats in my career; I have studied and worked in historical research, in education, in urban planning, and increasingly, in climate change policy research specifically. Those different fields all feed into my own individual perspective on the challenges facing global society in the 21st Century due to climate change. I ►



have explored responses to cataclysmic events in history, I have seen how seemingly small changes can build to sweeping outcomes given time, and I have seen how messaging can be critical in effecting these changes. So, this is how I can help as best I know how; by helping to foster this kind of individual perspective shift among professionals, those who often have the immediate capacity to effect small but *meaningful* changes in their own practice. Any one change, all by itself, would never be enough. But if hundreds of thousands of design professionals are all making similar decisions in their practice, all around the globe, that *will* be felt.

If you are well-versed in adaptation policy and methods, the Primers may contain some insights you've not thought of, or they may be a useful tool for you to provide to colleagues and clients seeking more information without drowning them in technical documents. If you're looking to get your feet wet but aren't sure where or how to start, they provide a solid framework for building that understanding, and we have provided many connections to both source material and working tools to make the process as slick as we could. If you have questions, the Primers probably contain an answer, or point to where you can find that answer. And they're free for you to download. Putting a price on the Primers would have served as a barrier, and our intention was to reach as broad an audience as possible. Because in the end, we're all in this together. And the only way we're going to mitigate the severity of the problem, and hopefully pull ourselves through the coming changes, is together. It will take a lot of work. But many hands will make short work. So let's get to work, shall we? The Primers can be found at *http://www.csla-aapc.ca/primers* SL

IN MEMORY OF Don Wuori

JULY 21, 1953 – SEPTEMBER 18, 2018

Respectfully Submitted By: R. Kim Perry, FCSLA, MBCSLA

Our community lost a bright light and powerful presence with the passing of Don Wuori on September 18th. Those of us who were fortunate enough to know and work with him are feeling a strong sense of loss as we reflect on the life of this warm talented person who left us too soon.

Don's talent was rare and multi-faceted. The influence of his Finnish heritage was evident in his approach to design and the way he lived his life. His ability to effortlessly capture a compelling design solution, then to express it in his unique graphic style, was truly inspiring. There was a direct flow of energy from his brain, through his pen to the page. As with other true artists, it seemed that he was able to clearly see things that others couldn't. This is the mark of a born designer. He continued to hone and refine his craft throughout his 40-year career.

With his unique skill set, Don was perfectly suited to the challenges of charrettes. He was in great demand as he worked on numerous high-profile Canadian projects but also many more around the world including the United States, China, Russia, Portugal, India, Malaysia and Syria. Being a lead designer in a charrette environment is not for the faint of heart. These pressure-filled events, usually involving community interaction, require focus and determination. He had a rare ability to filter out the "noise" and remain focused on the task at hand. At the same time, Don's presence had a way of uplifting team mates by lightening the mood through his good nature, humour and energy. He would often take a base plan to his hotel room in the evening after a long day and turn up the next morning with the concept all worked out.

Don loved life. Most important to him were his family and friends. He met his wife, Wendy, in Vancouver in the 1980s and they enjoyed more than 30 years together. He drew his inspiration from Wendy, his wife and their two children Kirsten and Paul. He was so proud of those two. On road trips, unwinding after intense working days, Don would talk about them with great affection, sharing stories of their life's journeys.

His big laugh was legendary. He truly had the ability to light up a room with his presence. He loved interesting food, good beer, traveling and spending quiet time with those he most cared for. In recent years, he spent considerable time mentoring students and new practitioners. Those who were lucky enough to work with him will carry his influence forward through their own careers as they become better professionals. We are lucky to have had Don as part of our community of landscape architects. He will be missed. SL

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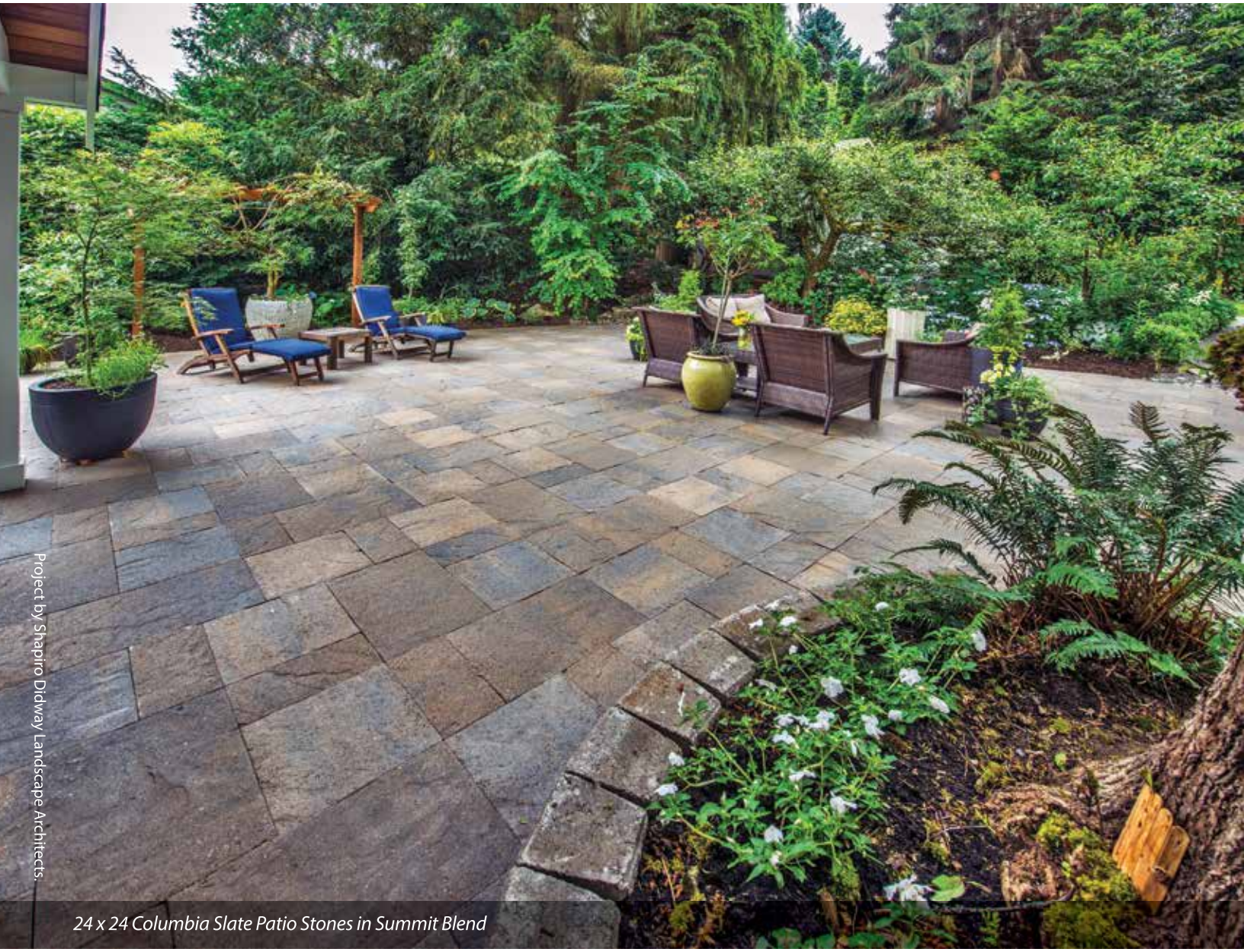

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