

The farewell edition of New Terrain

News and commentary for emerging green infrastructure markets

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Functional Plants. Functional Landscapes.

COMING UP THIS WEEK:

Thirsty urban trees
Global alliance for green
ASLA on IUCC report
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Worth reading

Protecting thirsty urban trees with stormwater

Urban forests are great for keeping our cities cool, but as temperatures go up, they need water to survive. Redirecting storm water to street trees can help.

A research team at the University of Melbourne found that trees planted in pits fed by stormwater grew at two times the rate of trees planted without any stormwater control measures. Now, they are working to get that information to cities to drive implementation on the ground.

Australian researcher Stephen Livesley, University of Melbourne, says urban trees are not only the lungs of our cities, but they also provide a wealth of health benefits to people living around them. "They cool us down, reduce air pollution and contribute to our mental and physical health. They also constitute habitats for birds and help maintain biodiversity."

Water-sensitive urban design uses biofiltration systems that clean stormwater runoff before it enters waterways. Integrating trees into these systems is a win-win, as they can improve water retention in the biofiltration systems and redirect stormwater to thirsty trees, which ultimately contributes to a healthier urban forest.

"We showed that you can grow trees at twice the rate when planted in water-sensitive urban design systems," Stephen says.

The City of Melbourne is exploring different water-sensitive urban design systems and is looking at implementing them for tree systems in and around the new Metro train stations to help them reach their canopy cover and water-use targets.

But, there are challenges with moving and storing stormwater in dense urban landscapes, because it has to compete for space with other underground services like gas, telecommunications and other stormwater infrastructure.

Crucial to getting urban forests to thrive and survive through challenging summer conditions is convincing local governments that water-sensitive urban designs are worth the financial investment.

"More thought and a little more money needs to be spent on planting trees for a future urban forest, because just digging a hole in the asphalt and popping a tree in does not guarantee that tree's survival," Stephen says.

He says this highlights the importance of communicating ideas and collaborating across disciplines. Ecologists, plant physiologists, engineers, urban planners and landscape architects should all come together to communicate the challenges and develop solutions.—excerpted from **Protecting our thirsty urban trees from more harsh summers** by Emilia Bisogni, Andrew Butler, Iman Taleb and Stephanie Choothe for the University of Melbourne.

IUCN launches global alliance for greener cities

The International Union for Conservation of Nature (IUCN) has launched a global initiative to create greener, more livable cities that will improve the health, well-being and prosperity of people living in urban areas.

The IUCN Urban Nature Alliance will raise awareness of the value of ecosystems in urban areas, and of how these ecosystems can help address urban challenges including air pollution, flooding and health problems caused by lack of access to quality green spaces. The Alliance will also develop a City Nature Index, providing a standardized way for cities to measure the quality of their underlying stock of natural resources – known as 'natural capital'. The Index will be piloted in five cities, including Edinburgh, and will be available for use by governments, civil society and researchers.

"By 2050, over two-thirds of the human population will be living in cities," says IUCN Director General Inger Andersen. "The new IUCN Urban Nature Alliance will help carve out more space for nature in urban areas, and accelerate the move towards green, livable cities that are urgently needed across the globe."

Urban areas are disproportionately affected by the impacts of environmental change including flooding, storm surges, air and water pollution, and 'heat-island' effects, where the built environment is warmer than surrounding rural areas.

"We are now an urban animal for the first time in human history but we are still failing to design our cities in a way which incorporates nature," says Jonny Hughes, Chair of the new Alliance and Chief Executive of the Scottish Wildlife Trust. "Cities need nature more than ever as we face up to a rapidly changing climate..."

The IUCN Urban Nature Alliance will bring together international experts from a range of backgrounds including governments, charities, academic institutions and business associations. The Alliance is supported by a generous grant from Arcadia, a charitable fund of Lisbet Rausing and Peter Baldwin.—from an IUCN [press release](#).

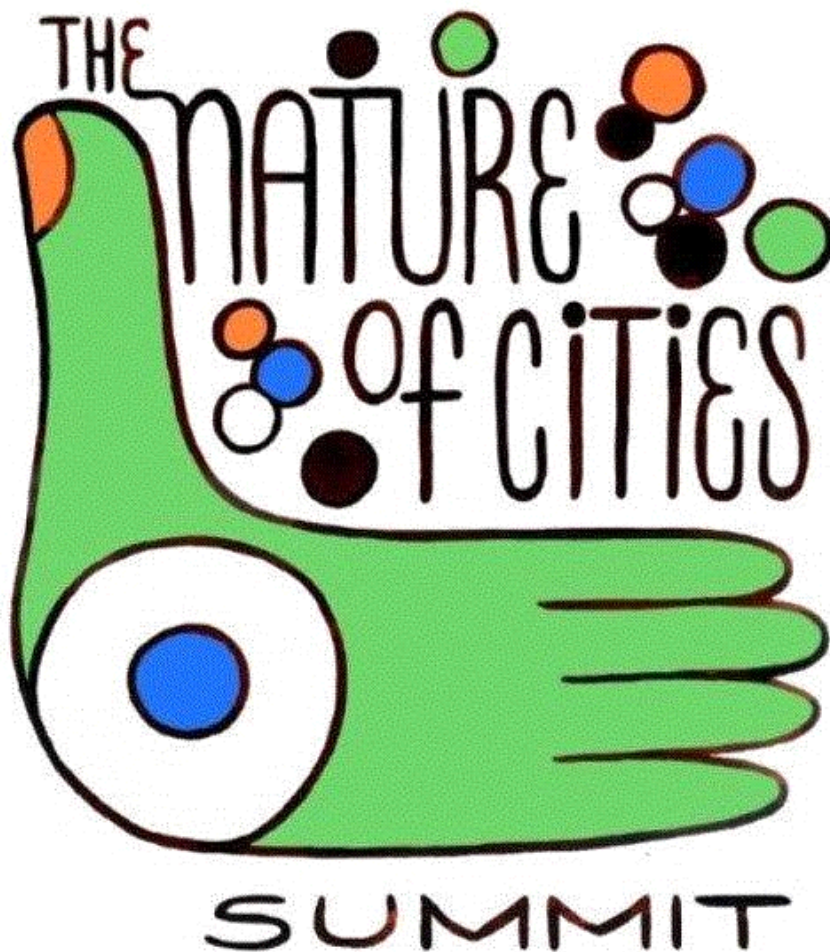
ASLA on IPCC Climate Change Report

The American Society of Landscape Architects CEO Nancy Somerville released a statement about the report from the United Nations' Intergovernmental Panel on Climate Change:

“Already, the dire effects of climate change are visible in every corner of the globe. But the startling new report of the U.N. Intergovernmental Panel on Climate Change makes clear that if significant actions aren’t taken immediately, the world could see a rise in atmospheric temperatures of 1.5 degrees Celsius by 2040, triggering catastrophic effects worldwide. Landscape architects work at the intersection of the built and natural environments and have embraced their responsibility to design and plan healthy, climate-smart and resilient communities. The ominous U.N. report further reinforces the need for all those responsible for shaping human environments to urgently redouble their efforts to both mitigate climate effects and to ensure the resilience of communities already being threatened by the consequences of inaction.”

A report issued by the American Society of Landscape Architects, [Smart Policies for a Changing Climate](#), spells out design and planning solutions, as well as public policies, that can help engender resilient and climate-smart communities.

June 2019 Nature of Cities Summit



The [Nature of Cities Summit](#) in Paris from June 4-7, 2019 aspires to “change the process of city building through interactive sessions and workshops that join thought leaders, knowledge creators, practitioners and stakeholders from diverse disciplines, ways of knowing and modes of action.” The meeting is meant to spur movement for “collaborative green cities.” Visit the [website](#) to sign up for communications from organizers.

This is the last edition of New Terrain

Thank you for being a *New Terrain* reader. For the past three years and five months, I've put together this biweekly newsletter with a focus on functional landscapes and functional plants. Increasing time demands in my professional and personal life make committing the 50+ hours a month I've been spending to pull together *New Terrain* every two weeks difficult.

To readers who've sent in positive comments, clarifications/corrections and items to include: Thank you. Your engagement with the topic has been my payment. I believe strongly in what you do. I believe vegetated functional landscapes are vitally important to today and tomorrow. I believe we need green infrastructure practitioners that are fearless in calling on engineering, horticulture, statistics/data analysis, ecology, sociology and politics to realize urban spaces that not only look good, but provide direct and indirect benefits back to residents, society and the economy.

The emerging discipline of green infrastructure in my eyes is broad in that it is inclusive of green stormwater infrastructure (GSI), urban forestry, ecological landscaping, pollinator habitat, plantings to quiet noise and remove air pollution and more. As the United States and world continues to urbanize, we are learning that cities need plants and their benefits more than ever. And cities and governments are beginning to step up to provide funding for it.

Debbie's green infrastructure frames

I've rarely included my opinion in this space, but since this is my last issue, here are just a few thoughts that frame my thinking on the future of green infrastructure.

I see an emergent way of developing landscape spaces that is in flux. Existing disciplines are competing for position, and new players are entering, seeking to define a new industry. Policy is pushing green infrastructure. Public projects are financed using public funding. Private projects are driven through regulation. While the evidence base is mounting for the benefits of plants to people and cities, we need more hard data that can inform real world modeling. And we need more data for projects that have been operational over time.

Below I've jotted down some of the ideas that I've formed about green infrastructure over the last three years.

Horticulture must become a major stakeholder in cities of the future.

- Green infrastructure is all about functionality. It won't stick if it doesn't look good, and while that's primarily what today's horticulture industry is all about, many traditional horticultural practices will not deliver expected green infrastructure outcomes. Cities need more horticulture, but the discipline also has to evolve to meet the challenges of today's world.
- A number of ecological landscape practitioners have made this their life's work. The world needs an army of ecological landscape practitioners steeped in horticulture and ecological land stewardship. And, they need to be valued, demanded (or mandated) and supported in their work.
- Many landscapers and landscape contractors have deep experience in green infrastructure. But too often when I speak with them, they say they are brought in at the last minute on jobs and their opinions often don't count. Credentialed professionals like to deal with credentialed professionals. If green infrastructure is going to soar, the experience of ground level businesses and workers must be included.
- When it comes to maintenance of green infrastructure, a project or installation that begins with good intention can morph over time due to default/rote behaviors of a property/building manager or landscape crew. What happens on the ground in landscape maintenance has huge environmental impact, yet it's often overlooked. A maintenance manual is not the only answer. Staff changes and contracts move from one company to another.
- A functional planting may take five years to look good (or provide habitat) and one badly acting crew can destroy the functionality of the space for years in 10 minutes with a chainsaw. WEF's GI certification is an effort to help address the issue for GSI, but it's only a start for an effort that should be a movement. The

guy working a landscape maintenance job with the weed eater often influences the ultimate performance of a space designed as green infrastructure.

- Whether or not it's GSI, pollinator plantings, urban forests, highway buffer zones or a green roof, if it doesn't look good, people don't want it. Horticulture is a lot about creating appealing spaces and plants. Green infrastructure is part of horticulture, only the discipline doesn't have a seat at the table.
- Cities need billions of plants. While it's nice that cities, counties and non-profits have started nurseries to grow plants for cities, the way to meet demand is through larger scale commercial production. The existing nursery industry needs to see a viable, stable market that can be served at a profit.

Native plants are vitally important for the future.

- However, rigid rules that all plantings must be native in a world that is shaped by man is like trying to make bread without baking soda. I am hard-pressed to think of a native plant that has evolved to perform in a city. We need functional plants in cities. That will include non-native species too.
- That we need more native plants is a given. That we need a wide range of native species for landscapes is also a given. We need billions of native plants. To do that, we need to have a better grasp of how to propagate, grow on and maintain them in an urbanized built environment. Not every plant will work in an urban space.
- For those that look down on natives as inferior, visit Mt. Cuba in Delaware. They demonstrate that native landscapes can and do look fabulous. Go to the High Line in New York and just open your eyes to nearly every major widely publicized public project.
- Natives are not going away.

Regulation will frame more plant choices in the future.

- There are a number of areas that I see where regulation will shape future plant choice: Invasive plant species, water scarcity and green stormwater infrastructure are just three currently at the forefront.
- Invasive plants have caused significant and real harm. Rules about the plants that will be allowed to be planted and those that will be prohibited will only increase in the future. Public money is being engaged to clean up the problem and as a result, there is political and administrative will to pursue the issue.
- Water use in many parts of the country is also a regulatory driver of plant choice. If you want to see the future, follow MWELO and other water efficiency efforts in California (Texas and Florida are also interesting to follow in this regard).
- Low Impact Development (LID) is sweeping the nation as a way to more effectively handle stormwater. Vegetated practices like bioswales are an important part of LID. Stormwater management is mandated and the features are monitored for performance. The plants that are allowed to be used for LID are often specified in technical guidance.

Engineers can appreciate plants.

- It's not always easy to capture the imagination of an engineer with plants, but if you make enough effort, your time will pay off.
- Likewise, every plant nerd interested in functional landscapes in urban spaces must learn about the kinds of things that engineers naturally gravitate towards. Things like utility infrastructure, soil hydraulics/infiltration rate and construction sequencing are just three areas that immediately come to mind.
- I've been present to witness "plant enlightenment" for a few engineers and I will attest to you that seeing someone light up with understanding and engagement at the natural world is a priceless joy.
- Help an engineer understand plants; you will make the world a better place in doing so.

Politicians drive green infrastructure.

- People pay taxes, politicians spend the money and make laws. When your politicians step forward to support urban forestry, green roofs, pollinator habitat, community gardens, new parks, GSI, etc., help them by getting that word out.
- Have events that showcase their efforts—give them a platform that demonstrates it was a good move. One of the things I've learned in my day job is you've got to provide political support for the politicians who step out to support your cause(s).
- If politicians do not promote vegetated solutions in cities, I see that default solutions will be entirely engineered/hard solutions. Plants are much more difficult than sizing pipes and underground storage tanks.
- When politicians are on your side promoting green infrastructure, be there with them to make sure they know what a good idea it is.

The next generation(s) is all over green infrastructure.

- There are thousands of professionals and working people in wide-ranging disciplines that see green infrastructure as a paradigm. Environmental issues are very important to younger generations across political, religious and racial lines. The paradigm for how we operate in the future is morphing.
- If you're older, reach out to mentor a young person; we can help them learn how to ask questions, judge facts and navigate politics. If you're a young person: Ask someone that you admire to lunch or coffee. Learn from them.

There's not enough time or space to share all of the sources that I use to develop *New Terrain*, but here are a couple of blogs/email newsletters that I always find very interesting: Robb Jolly's *G3 Digest* (GSI newsletter, email Robb to subscribe: robb@revisionsd.com), *The Nature of Cities*, and almost anything by Jared Green, who can generally be found on ASLA's *The Dirt*. If you're looking for an association, [Ecological Landscape Alliance](#) and [American Society of Landscape Architects](#) offer great resources and sponsor excellent events. Finally, the [Landscape Architecture Foundation](#) is dedicated to quantifying the benefits of landscapes. Their [Performance Landscape Series](#) is a tremendous resource.

I'll continue to follow functional landscapes—I've got too many fun search terms set up not to. I plan to step up posting on LinkedIn with a focus on green infrastructure. If you're interested in seeing those posts, connect to me: <https://www.linkedin.com/in/debbiehamrick>.

Thanks again for letting me into your email inbox every two weeks for the past three-plus years. You're part of an amazing community of people dedicated to creating a better world through functional landscapes and plants. It's been an honor.

Worth reading

Wild Suburbia: More Mammals than Expected Live near People by Mick Kulikowski for *NC State University News* and **Mammal communities are larger and more diverse in moderately developed areas** by Arielle Waldstein Parsons, Tavis Forrester, Megan C. Baker-Whatton, William J. McShea, Christopher T. Rota, Stephanie G. Schuttler, Joshua J. Millsaugh and Roland Kays in *eLife*. doi: 10.7554/eLife.38012

The Challenge of Greening Old Cities Is Addressed At AIPH International Green City Conference, Italy by International Association of Horticultural Producers (AIPH) in *Perishable News*.

Saving the city in the forest by Ramsey Nix in *Atlanta Magazine*.

MU Campus Landscaping Hopes to Slow Spread of Invasive Species by Samantha Waigand for *KBIA*.

The Lantana conundrum: How to choose a non-invasive species for your garden by Kenneth Setzer for the *Miami Herald*.

Native Plants in Containers by Thomas Christopher on *Garden Rant*.

Locally grown: Native gardening gets back to the region's roots by Matt Markey in the *Toledo Blade*.

Guest speaker shares her research on urban green roofs by Jack Plewa on *NCClinked*.

What is "porous pavement" and how does that help soils capture and clean water? by Adrian Gallo for *Soils Matter*, the blog of the Soil Science Society of America.

Sustainable, water-wise planting with style by Carey Blakely in the *The Coast News*.

Spreading the Word about Pet-Friendly Spaces: Turf Mutt turf Sponsors New Television Show, Ready, Set, Pet, a press release by the Outdoor Power Equipment Institute.

Monarch Butterfly Observers Expect Largest Migration in a Decade by Monika Maeckle in the *Rivard Report*.

A laser revolution: How LIDAR is changing the way we see the world by Eva Botkin-Kowacki for *Christian Science Monitor*.

Storms cause flooding, but green infrastructure can help homeowners stay afloat by Marlene Cimon in *Popular Science*.

As a landscape architect, how do you interpret the word "biodiversity?" How does this meaning find expression in your design? on the *Nature of Cities*.

Editorial: Rain gardens seem a pain now, but may blossom someday in the *Columbus Dispatch*.

Ecologists suggest it is time to rethink the modern lawn on *Phys.org*.

Facts and fallacies about native plants by Carol Reese in the *Jackson Sun*.

Parks Are a Critical Solution to Climate Change by Jared Green on ASLA's *The Dirt*.

U.S. states agree on plan to manage overtaxed Colorado River by Dan Elliott in the *Denver Post*.

Best,

A handwritten signature in black ink, appearing to read 'Debbie'.

Debbie Hamrick
NewTerrain

This email was received by 19,141 readers.

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