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On March 29, the National Building Museum will host the opening festivities of the [National Cherry Blossom Festival](#). As part of the ceremonial kick-off, California-based origami artist [Robert Lang](#) will be on-hand to create an origami giraffe for the celebration. *NBM Online* spoke with Mr. Lang about his unique career path, the role of origami in industrial design, and his (most recent) favorite creation.

NBM Online: Before becoming an origami artist you had a successful career as both an engineer and physicist. This seems like a radical shift—can you tell me a little about your career and how you got started

with origami?

Robert Lang: Well, origami actually came first. I became interested in origami when I was 6, but I didn't get interested in math until high school—although I had a long interest in the natural sciences. In college, I was studying science and engineering, and origami was a hobby.... However, one of the things that you learn in a place like Cal Tech is to...figure out [any subject's] underlying laws [and] mathematics, and then use that knowledge to advance the field. That approach can be applied to origami as well as to technology, and so, while I continued to pursue a career in engineering and physics, I also began to apply mathematical ideas to origami to improve my art.

NBM Online: Traditionally, what role does origami play in Japanese culture?

Lang: Not much, really. Historically, it was a folk art. Origami was adopted into the elementary school curriculum in Japan, so every Japanese person learns a little bit of traditional origami, but it's not viewed in the same light as other crafts, such as pottery, brush-painting, or paper-making. For example, there are no "Living National Treasures" of origami in Japan, even though the great master Yoshizawa eventually did receive some recognition and support from the Japanese government.



NBM Online: A number of architects, including Frank Gehry, have been inspired by origami. Like architecture, origami is both an art and a science—does one side play a bigger role in your craft?



SPOTLIGHT ON DESIGN: Emerging Voices

With the collaborative series, *Emerging Voices*, originated by the [Architectural League of New York](#), the National Building Museum brings architecture firms beginning to gain prominence in the field to local universities, for FREE!



The series, which visits four venues in

the D.C. area as well as venues in New York City, is presented in partnership with the Architectural League of New York.

The series began on March 4, with a presentation by the firms [el dorado](#) and [WORKac](#) at Howard University's School of Architecture and Design.



Another thought-provoking presentation took place at The Catholic University of America on March 11 when designers from [StossLU](#) discussed how landscapes work in design and

Lang: Not to me. To me, art and science are inextricable parts of origami. It's like asking if blue or red plays a bigger role in painting.

NBM Online: You have been credited as one of the pioneers of the cross-disciplinary marriage of origami and mathematics and have actually overseen the use of origami in industrial design. Can you briefly explain the application of origami to say, the creation of a car airbag?

Lang: In the case of the airbag, the problem was that airbag design is done using computer simulation to see how the airbag performs. The problem was that the simulation needs to start with a folding pattern that flattens the 3-D airbag, and the programmers didn't know how to take an arbitrary airbag and flatten it within the simulation. It turned out that the algorithm they needed was one that I'd devised for designing deer and insects and other subjects with lots of appendages.

NBM Online: Unlike other origami we've seen, yours is so intricate and complex, i.e. the fish scales on your "Koi, opus 425" piece. This may be like sharing a secret recipe, but if you can share, how do you achieve these designs with only one sheet of uncut paper?

Lang: One of the great things about origami is [the] strong culture of sharing of techniques, so most of the modern masters are quite willing to share their secrets. In fact, I wrote an entire book of them, titled (I hope, appropriately) *Origami Design Secrets*. My goal...was to [show] anyone [how to] design complex (or simple) figures for themselves. And from what I've heard from my readers, quite a few people are doing exactly that.



NBM Online: You have created more than 400 pieces, is it crazy to ask if you have a favorite?

Lang: My favorite is usually one of the most recent folds; no "favorite" lasts very long because I eventually do something new that knocks the last one off its perch. My most recent favorite is my "Barn Owl, opus 508." [That means it] is my 508th cataloged design. I number all my designs in roughly chronological order; as of late January, I'm up to 529.

The National Cherry Blossom Festival Family Day and Opening Ceremony is sponsored by Target and is funded in part by the Washington Examiner and the D.C. Commission on the Arts and Humanities, an agency supported in

part by the National Endowment for the Arts.

In late March into early April, Washington, D.C., particularly the famed Tidal Basin, is brightened by the pale pink and pure white beauty of the cherry blossoms. As the city prepares for the annual cherry blossom festival, **NBM Online** spoke with landscape architect **James Urban, FASLA** who specializes in the design of trees and soils in urban spaces about the famed cherry trees and what to consider if you want to plant a cherry tree in your garden.

NBM Online: The famed cherry trees planted along the Tidal Basin in Washington, D.C. are the highlight of the city's annual Cherry Blossom festival. Yet, each year many of the trees need to be replaced. What are some of the factors affecting the cherry



designers from **Onion Flats** discussed how to integrate buildings with communities.

There are still two more lectures in the series, so it is not too late to hear from some of the today's freshest architectural voices. Here is information on the upcoming *Emerging Voices* events:

**Thursday, March 20
6:30 – 8:00 pm**

Moorhead & Moorhead and **Johnsen Schmalig Architects**
Held @ **Virginia Tech's Washington Alexandria Architecture Center**



**Thursday, March 27
6:30 – 8:00 pm**

Belzberg Architects and **MOS**
Held @ the **University of Maryland Architecture Building**

Free. Pre-registration required. For more information visit the Museum's [Spotlight on Design](#) webpage or the [Architectural League of New York's](#) web site.



Emerging Voices is offered in Washington as part of the Museum's *Spotlight on Design* lecture series sponsored by Lafarge, the world leader in construction materials, with additional support from the American Institute of Architects. In New York, the series is sponsored by USM Modular.

trees at the Tidal Basin?

James Urban: I believe that there are two issues with the cherry trees. The largest is the occasional flooding of the area as cherry trees do not like wet feet for very long. The second problem is soil compaction and visitor use. The National Park Service (NPS) does a reasonably good job of managing these conditions but we cannot expect large, long-termed trees under these conditions.

The only solution to the losses from flooding is replanting, which means a periodic rotation of new trees. In some ways this makes for a healthier stand with trees of many ages; and it is likely that the stand is gradually stabilizing. Often just a small change in elevation change or soil condition will make the difference.

NBM Online: What are some of the factors that people should consider if they want to plant cherry trees in their own garden?

Urban: Soil is always the critical factor. A good loam soil that is not compacted and drains well is ideal. Adding lots of compost to any soil is useful; but the compost must be mixed into the top layers (6-12" of the soil), which is hard but rewarding work that will benefit the entire garden.



The soil volume is also important. Many people think they should amend the soil to 2 or 3 times the diameter of the root ball at planting, but this is just to get the tree established immediately after planting. If you want a healthy mature tree, calculate the tree's mature crown spread (cherry trees can easily have a 20 foot or greater diameter spread) and be sure there is several feet of good soil in that area. Digging a number of test holes can tell you

the soil conditions: if it is hard to dig, the roots will also have problems growing and if the soil is a grey color or full of rock or brick seek the advice of someone who knows soil. Master gardeners or a neighbor who has a good looking garden are good resources.

If you suspect slightly poor drainage try planting the tree on a mound 6-8" above the adjacent grade with gradual side slopes up to the top of the root ball. The soil volume does not have to be right under the crown as long as the tree can get access to the soil volume. The tree can be near a walk, if there is a garden or lawn space connected to the location of the tree. The roots will grow under a walk if the soil is not too compacted but be prepared for some amount of root heaving of the paving.

If there is slightly less soil volume than you think you need, the tree will adjust but will grow slower and have more problems with age; but that might not be enough reason not to plant. Very poor drainage is the one factor that would indicate do not plant.

NBM Online: If a cherry tree will not work, what are some similar types of trees that people could consider planting?

Urban: There are lots of flowering trees in the area. Crape Myrtle is the best small tree for tough urban soils. The National Arboretum is a good place to go to look at all the options and talk to experts. I always like to look around the neighborhood to see what trees are growing well. Often soil conditions are the same and soil is the primary determinant.



Q: What did the General Motors public relations department initially propose as an alternative to fireworks at the 1956 dedication of its Technical Center, in Warren, Michigan, designed by Eero Saarinen?

Think you know the answer? [Click here](#) to find out.

One of the great joys of gardening is talking to other gardeners to learn what they know. It is also a good way to meet new people as few people are offended with the question "What kind of tree is that in your garden that looks so nice?"

Want to learn more about Washington, D.C.'s cherry blossoms? Visit the web site of the [National Park Service](#) and the [National Cherry Blossom Festival](#).

James Urban, FASLA is credited with helping to re-awaken the profession of landscape architecture to the skills required to successfully plant trees in difficult urban soils. He has written and lectured extensively on the subject and introduced many of the current urban tree planting standards.

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