



Rooftop Conifers

By Colby Feller • Photos by Bruce Feller

Like any great pugilistic match, the first few rounds are a feeling out process. You have to learn the strengths and weaknesses of your opponent, and adapt and be prepared for surprises. Like a boxing match, the conifer test and display garden atop the Arsenal in New York City, which was my first experience with conifers on rooftops, took a few rounds to feel out, but now it is, I believe, a knockout.

In the fall of 2010, a small conifer test and display garden was installed atop the Arsenal in Central Park. Located on the East Side at Fifth Avenue and 64th Street, the building currently houses the offices of the headquarters of New York City's Department of Parks and Recreation and the Central Park Zoo. The garden has a north-facing exposure, the building protecting it on one side, but the garden is still fairly exposed. The Arsenal rooftop is a challenging location as the garden is neither surrounded by buildings nor under a tree canopy, and is subject to very high winds. The plants must also be well

chosen, as there is no irrigation system or formal maintenance program. Instead, the garden is cared for with the help of interns and volunteers (more information about, and pictures of, the original installation can be found in the Winter 2011 *CQ*, as well as in an article by Sean Callahan, “Hidden Gem in the Making” on the ACS website).

This garden, called the “Conifer Corner”, has now survived its fifth winter and fourth growing season. During round one, we had a 75% survival rate. A couple of factors are likely to have been responsible for the lost plants. Although I am a proponent of fall planting, logistics forced the initial planting into the first week in November, which may have been a bit late, and this was followed by one of the worst winters on record. Perhaps, if the plants had been more established, fewer plants would have been “knocked out”. The good news is that during the later rounds, with winter’s delivering record cold and snow, only five plants were lost from the remaining original installation and these were specimens which were replaced in year one.

The plants definitely illustrated an “all or nothing” pattern at the site. Besides those plants which had to be removed, only a couple of the remaining specimens looked a bit worse for wear after the challenging first winter, but most looked perfect and were pushing new growth. I have noticed a trend with conifers here in Manhattan; year one appears to be THE year which makes all





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the difference. Even in less severe conditions, with proper irrigation, year one poses a challenge, and the plants are either lush and vibrant or completely dead, and then the remaining plants are off to the races.

Perhaps not surprisingly, early expectations as to which plants would do well, did not play out. From the beginning, we recognized the site as being tough—no irrigation, a light-weight soil medium with little organic matter (Gaia soil), high winds, an urban environment with resultant pollutants, and the urban heat island effect. We thought plants like *Pinus heldreichii* ‘Irish Bell’ and the various junipers would be as tough as nails, and the *Cedrus* more delicate, but we were incorrect. One might be inclined, since this was in a single test garden with limited specimens, to call this a fluke, but at another site in Manhattan I work on, which features a number of conifers, *P. heldreichii* and any number of junipers also did not survive. It may be that these plants have difficulty in the City because they are grown in container gardens. However, interestingly, my father also had some difficulty with the *Juniperus horizontalis* ‘Icee Blue’ in the ground on Long Island, as it appears fussy until well established. Only one of two *Juniperus horizontalis* ‘Monber’ Icee Blue™ planted at the Arsenal survives, again illustrating the importance of care until the plants are acclimated and established.

Although in general dwarf and miniature varieties of plants seem to be more robust; on urban rooftops, the larger juniper specimens have done well, while our dwarf favorites seem to be hit or miss. Plants like *Juniperus procumbens* ‘Nana’, *J. squamata* ‘Blue Star’, as well as the ‘Icee Blue’ mentioned above have turned out to be not well suited to rooftop environments. Junipers in general, though, may not be the right choice for rooftops for completely different reasons. On the terraces and balconies in the City, clients live in close proximity to their plants. Working with junipers and installing them can give us gardeners the “juniper itch,” and although clients may not be as entangled with the plants as we gardeners, the people who own these gardens may like to brush their hands along plants, walk barefoot outdoors, and may be allergic.

In the City, wind and the resulting desiccation are also factors to contend with. Many times we think of this as a winter phenomenon, and is especially a concern in containers which freeze solid during the winter, the frozen soil adding to winter desiccation. Interestingly, this has not been the case for conifers here in the City, either for the dwarf plants discussed here, or larger specimens which can be used as hedging material—*Juniperus chinensis* ‘Hetzii Columnaris’, *Juniperus virginiana* ‘Emerald Sentinel’, and various *Thuja*, for example. Even with proper irrigation, it appears desiccation is a summer event in the City, and when compounded with the hot buildings and HVAC venting atop many of these roofs and terraces, there is no room for error. The lack of irrigation at the Arsenal makes it a true test garden in the summer months.

Although I will not list every plant at the Arsenal, a number of *Chamaecyparis* which were pre-existing at the site, as well as the *Chamaecyparis obtusa* ‘Nana Lutea’ and ‘Lynn’s Golden’, which were planted in the Fall of 2011, have done very well. Then there is an odd trend, where the fairly globose, or somewhat pyramidal forms have not retained their shape, but have grown horizontally and irregularly, even though neither lack of sunlight nor crowding are issues at the site.

Two *Cedrus* - *C. deodara* ‘Prostrate Beauty’ and *C. deodora* ‘Blue Ball’ both did well for five years, and then after pushing Spring growth, both completely defoliated in a matter of a week. Being that they survived for so long, and have performed admirably at this site and others, I will call this an aberration. We are trying two more *Cedrus* at the site which seem to be very content. *Cedrus* fall into the surprise category, as we thought they would be more delicate, and I had never seen them used on rooftops before. The



other conifers introduced into the garden were a very small *Picea abies* ‘Gem’ (since deceased), *Abies balsamea* ‘Piccolo’, and *Tsuga canadensis* ‘Minuta’. Since these are single plants, any observations are of limited value; but I was surprised by the success of the fir, considering the lack of irrigation and the humid weather. I am pleased to see *Tsuga* surviving, as it may also be a good choice for shadier sites, and as we are expanding the garden this year into a new corner where shade plays more of a role. These are in addition to *Cryptomeria japonica* ‘Tansu’—which has excelled. Caution to those who wish to use *Cryptomeria* on rooftops, they need to be protected. The specimen on the Arsenal rooftop sits low to the ground, and it is nestled against the building, yet it also needs a good number of hours of sunlight to thrive and remain full, thus making siting difficult. Various dwarf *Picea abies* cultivars have shown mixed results for us.

Any number of pine species and cultivars seem to excel on rooftops, including, but not limited to *Pinus thunbergiana* ‘Thunderhead’, *P. densiflora* ‘Low Glow’, *P. sylvestris* ‘Hillside Creeper’, *P. banksiana* ‘Schoodic’, and *P. mugo* var. *mughus*. Interestingly enough, pines appear to take sun and drought better than many of the other conifers, but suffer the most from winter desiccation, unlike the other conifers where summer desiccation is more of a threat.

We have also added some non-conifer specimens, but with a focus on dwarf

plants such as *Ilex crenata* ‘Dwarf Pagoda’, *Rhodendron keiskei* x ‘Fairy’s Fairy’, and *Acer palmatum* ‘Winter Flame’. These plants add different textures and further blend the Conifer Corner with the rest of the garden. As an aside, Japanese maples do remarkably well on rooftops and are a lot less delicate than they may at first appear—I would dare say they are our best performing specimen container trees in the City.

Overall, at the test garden at the Arsenal, and other sites in the City, dwarf conifers do very well in containers due to their size, slow growth rate, ever-green foliage, and diversity of form, texture, and color. I find that conifers can make for a very clean, almost sterile and regimented design; so, for many people, one needs a fairly dense planting and inter-planting with non-conifer species to create a visually pleasing garden. This is because unlike in a suburban garden, where your plantings are surrounded by lawn, trees, or beds, in the City, plants are in containers, and surrounded by walls, railings, pergolas, and the building itself—already have very “constructed” environments.

In just the few years, the scale of the Arsenal test garden is already feeling mature, with plants beginning to “kiss”. As always, the challenge is to find a balance, because on the rooftop, like many rooftops in the City, there is simply limited space into which to transplant the existing specimens, or to add more plantings and containers. Perhaps this is why annuals and tropicals are so popular on rooftops; you start with a blank canvas year after year. And, yet conifers, which are underutilized on urban rooftops, and are too often relegated to hedging material, are in many ways ideal for these spaces. Many people want the feeling of being surrounded by trees on their rooftops, and often large mature trees are not possible. But, much like bonsai, conifers can offer the shape, feeling, and structure of a large tree without being all that large. Not only are small specimen conifers ideal for small containers, but even large specimens, 6–12 feet, do very well in small containers. We have plenty of 6 foot plants in 18 or 24-inch containers which, although not necessarily ideal, do well and meet the challenge we face in the City with limited space. *Acer* aside, I can’t say that I have seen other genera of trees or large shrubs do as well in small containers.

Maybe there is no knockout plant, but at the end of the day *Chamecypris* cultivars are my rooftop favorite, and do very well. They offer so many different sizes, colors, and offer a very unique “texture”, especially for those who find conifers too “rigid” or formal.

The Arsenal, as a conifer display garden display, illustrates well the various shapes, textures and colors available which work well on an urban rooftop. Another example, shown in photos here, of the possible uses of conifers in the City, is a garden I work on professionally. This garden, one of the highest residential garden spaces in New York City, is also composed mostly of conifers and has helped inform some of my own



observations in this article. That far up in the sky is like planting on the side of a mountain, and when you are not in the clouds, you have views of Central Park, the Hudson River and New Jersey to the West, and the East River and Queens to the East. This site only receives maintenance a few times a year, and, indeed, conifers are one of the few genera of plants which can face the challenges of the site while also adding four season interest for the owners of the apartment which has floor to ceiling windows all around.

The Arsenal garden has been well received. The ACS supported me in this endeavor as I stepped into the world of horticulture as both a hobbyist and a professional, and little did I know how this little garden would bloom both literally and figuratively. I am excited to say that the Arsenal has applied to bring the Conifer Corner into full compliance with the requisites to be a formal ACS Reference Garden, and planting will likely be ongoing as this article hits print.

If you would like to visit the Arsenal garden—830 Fifth Avenue @ E. 64th Street—on a trip into Gotham, please contact Eileen Remor during visiting hours, Monday–Friday, 9am–5pm, (212) 360-8240, or via e-mail at, Eileen.Remor@Parks.NYC.Gov. The Arsenal itself is worth a visit for history buffs including the 1930’s WPA murals depicting historic scenes of the 19th century park, as home to the historic “Greensward Plan”, and, on the third floor, the Arsenal Gallery, open 9:00 am to 5:00 pm, Monday through Friday, shows “eight to ten exhibitions of fine arts and photography...mounted annually, with most focused on the natural environment, urban issues and parks history.” 📍