GREEN FURNITURE: AN ASSESSMENT OF FURNITURE SOCIETY MEMBER WORK

Steffanie Dotson[1]

INTRODUCTION

The Furniture Society is a member-based nonprofit organization founded in 1996. Its mission is to advance the art of furniture making by inspiring creativity, promoting excellence and fostering an understanding of this art and its place in society. By sponsoring a variety of programs that contribute to the education and enrichment of members and the public, the Furniture Society champions excellence, refinement, responsibility, and craftsmanship in furniture.

It seems that when it comes to woodworking and working with our hands, we are inherently more connected to nature than many other occupations. I attend the Furniture Society's annual conference every year in June. In almost every furniture maker presentation that I've listened to, the artist has mentioned nature as a source of inspiration. And in most encounters with fellow makers, I find that the lot genuinely tries to do good by our planet and its limited resources. Of course, the level of awareness varies among each maker, but consciousness of how we're using resources seems to exist on at least some level.

What is green furniture? There are many elements to consider when identifying green furniture, and I've listed only some of the ingredients below that responsible furniture makers are taking into account as they design and build. There are other elements to consider, and within the list below, one can continue to dissect each depending on the degree of responsibility a person chooses to pursue.

Materials – How are materials sourced and used, and is there waste? Are they renewable, recyclable, reused or repurposed? Are they safe? Do they off-gas?

Manufacturing Practices – Is the object designed well, and is it easy/efficient to manufacture? Are alternative sources of energy used during its manufacture?

Use – Keep it out of the landfill! Is the object durable, useable, and/or multi-functional? What happens at the object's end of life? Is it easily recycled or repurposed?

Fair Labor – Are the folks involved in the manufacture of the object treated and paid fairly? Maybe this doesn't apply to a one-person woodshop, but what about the laborers who made or processed the materials the furniture maker is using?

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Transportation – Is the object going to a local client? How are materials transported to the woodshop or place of manufacture? How does the final product reach the client? Is the maker able to walk or ride a bike to work?

Rather than try to place my own judgments about what's green enough, I opted to highlight the green practices that Furniture Society members are endeavoring. There's always room for improvement just like there's always more to learn. It's my hope that this peek into what different makers, educators, and businesses are doing will inspire even better things to come.

KEYWORDS:
green furniture, recycled material, locally sourced materials, urban felled trees, fair labor, educational and sustainable woodworking programs, reduction in landfill waste

AT THE MAKER LEVEL

Furniture Society member Peter Danko of York, Pennsylvania is thinking cleverly before he even starts building. His designs are the total package: repurposed materials, recyclable plastics, minimal waste and minimal material use with respect to wood. He's even come up with his own acronym for marketing to and educating his clients: the OMG factor. Most of us familiar with social media know what OMG means, but in this case, it stands for Obviously Manifests Green. He posted an essay he wrote on his website dedicated to this idea.

Danko's mission is to design as a positive symbol of sustainability. When he renovated his kitchen he wanted to showcase his idea that sustainable design can and must transcend the status quo to something better. The resulting cabinets are different than anything currently on the market, and a few of Danko's ingenious solutions have resulted in patents. The cabinet doors use magnets rather than hinges, and the use of materials is roughly 30% that of traditional cabinetry. One of the most attractive features is the recyclable plastic panel framed within each cabinet door and drawer front. At night they can be illuminated for a magical glow.

Danko's kitchen cabinets are minimal, sustainable, and beautiful. They contain no medium-density fiberboard (MDF), and just 20% of the wood that conventional frame and panel cabinetry uses. They're constructed without glue, nails, or screws, and easily dismantle for recycling at the end of their useful life. (Figure 1)

Danko's other designs include chairs woven with recycled seatbelts and chairs with seats and backs that float on pieces of repurposed automobile tires. All of his designs have a low carbon footprint, and he frequently uses ply-bending as a construction technique because it yields 8-10 times more wood from a log than solid wood manufacturing. Ply-bending is a very strong method of construction where several layers of thin pieces of plywood are laminated together around a form to sustain a curve or a shape other than planar.

One of Danko's most prized designs is the *NoCO2* (pronounced "no see oh two") chair. Danko says the name references no carbon because the chair has amazingly ergonomic properties derived from repurposed car tires; and this is significant because most ergonomic seating

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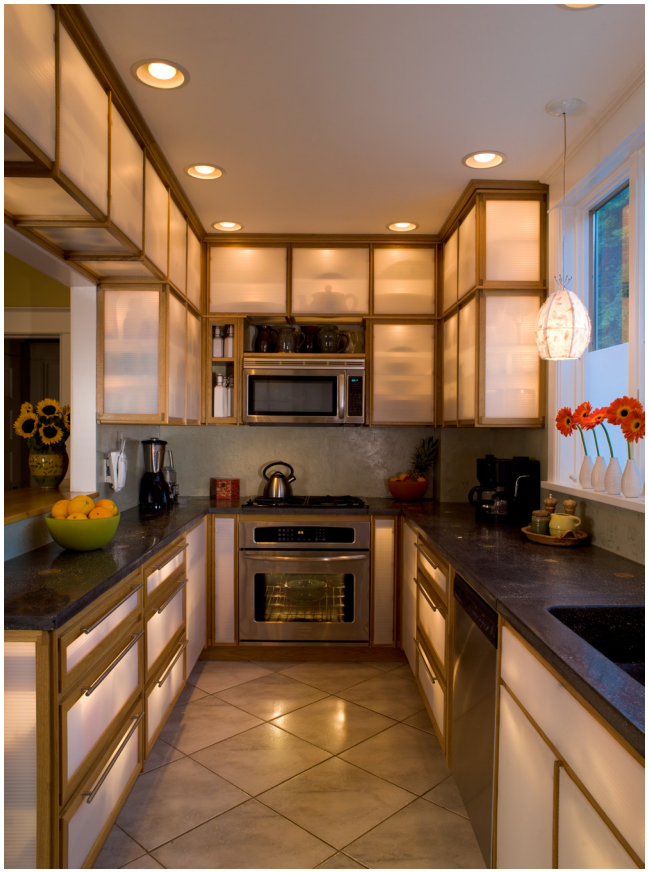

FIGURE 1: Kitchen cabinets made of sustainably certified wood, hollow core recyclable plastic, and waterborne finishes.

uses new materials that increase the carbon footprint tremendously. The seat and back of *NoCO2* float to accommodate user movement, and the result is a sophisticated ergonomic design using die cut automobile tires. And if that isn't impressive enough, the chairs also stack to 5 high.

Danko's website is full of information about each of his designs and how they relate to sustainability. One important point that he informs his readers of is that the energy used to convert wood from a raw material to a finished product is much less than any other industrial material. Wood is one of the few industrial materials that adds oxygen to the biosphere during its lifecycle. *Peterdanko.com* (Figures 2 and 3)

Furniture Society member Ashley Eriksmoen heads the furniture program at the Australian National University's School of Art. In 2014 at the Furniture Society's annual conference, she hosted a workshop and also gave a lecture about a program born out of her research and exhibition in Australia titled *Re-Forestation: How to Make a Tree From a Chair*. Workshop attendees were able to drop in during the conference, make together, and contribute to the production of their own collaborative grove of trees made from broken and abandoned wood furniture. The format of the workshop was similar to projects at past conferences such as the Allagash Barrel Project in Maine where whiskey barrels were donated and conference attendees repurposed them into furniture pieces and objects that were later raffled for a fundraiser.

Eriksmoen writes about the *Re-Forestation* project:

"It stems from research into rates of world timber harvesting, global consumption of new wooden furniture, and municipal waste per nation measured through landfill growth. Re-Forestation addresses repercussions of consumer culture, specifically the out-of-balance cycle of

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FIGURE 2: NoCO2 chair by Peter Danko made from sustainably certified ash veneer core with face veneer in mahogany and recycled automobile tires.

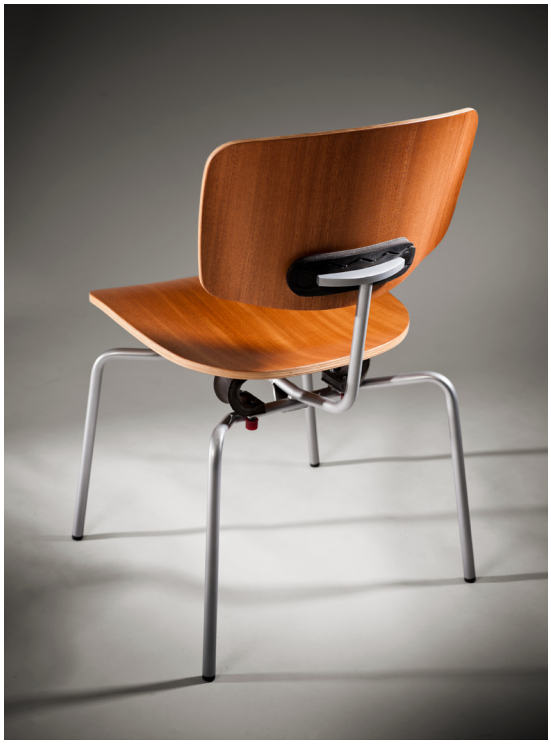
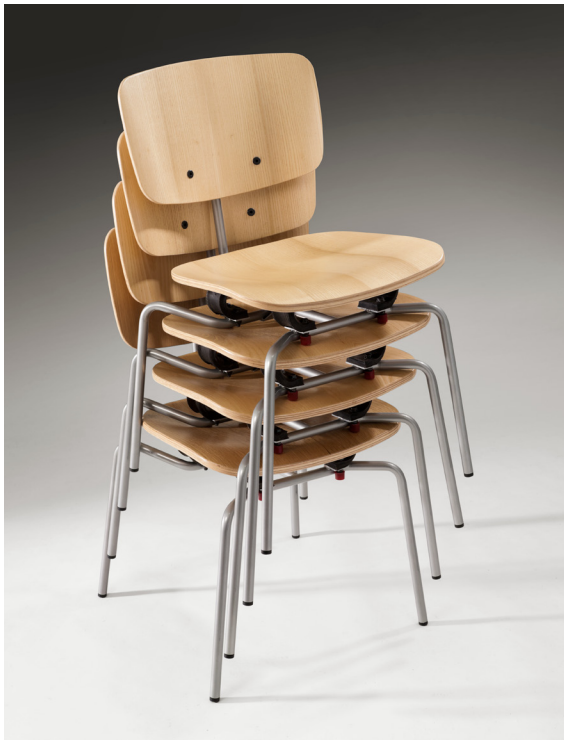


FIGURE 3: Stack of NoCO2 chairs by Peter Danko made from sustainably certified ash veneer cores with matched face veneers in ash.



casually discarding older, yet salvageable, furniture and so easily replacing it with cheap, semi-disposable furniture. The prevailing manufacture/consumer system overlooks the true costs of timber harvesting, underpaid labor, and garbage. The ratio between the time and resources it takes to grow a tree and the fleeting lifespans of contemporary furniture is perverse.

The situation the current and future generations face is that there is pressure on natural resources, a need to take care of the objects that already exist, to protect our beautiful natural resources and keep them renewable through very select and worthy usage. The type of furniture-making most of us [Furniture Society members] engage in is certainly sustainable through the longevity of objects made and the low volume we produce. Second hand timber is a valid resource—one we have ample access to in societies with such socio-economic circumstances that we can afford to dispose and waste things, and many of us could agree that much of the furniture produced in global export manufacture would have been happier to stay as trees. The Re-Forestation project reminds us of the importance of 'think global, act local' in our own practices." *soa.anu.edu.au/furniture* (Figures 4 and 5)

Furniture Society Member Larry Berger of Livermore, California repurposes objects that are otherwise at the end of their useful life, keeping them out of the landfill.

Berger has playfully called himself the King of Green, winning first place in the Trash to Treasure art competition three years in a row at the Marin County Fair. Last year his green art took second place in the Chair Art competition, first place in Recycled Art, and Best of Show in 3D Fine Art.

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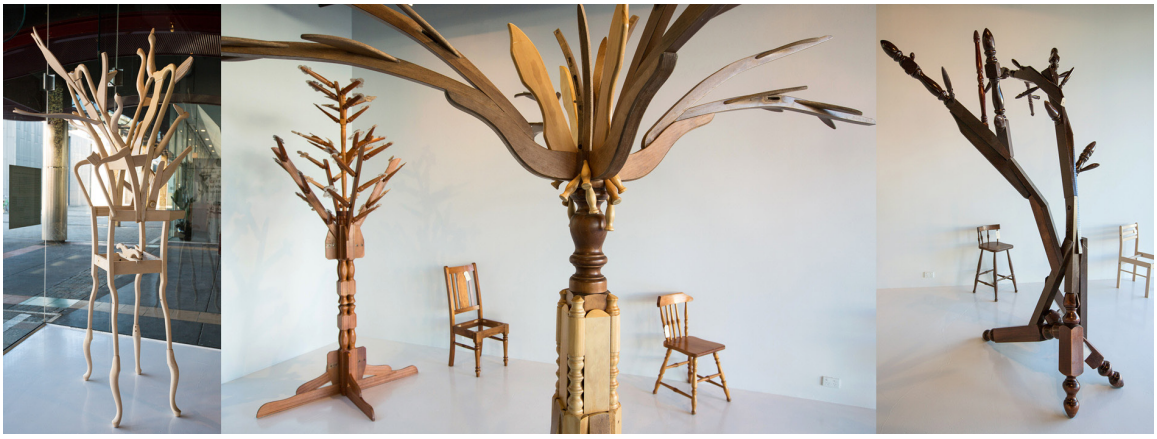
FIGURE 4: A forest of constructed trees from Eriksmoen's solo exhibition that brings awareness to the issue of deforestation.



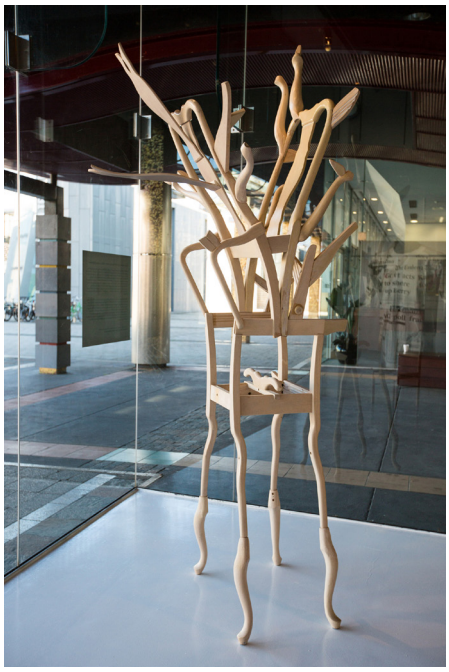


FIGURE 5: Eriksmoen's *Re-Forestation: How to make a tree from a chair* was exhibited Craft ACT: Craft and Design Centre in Canberra, Australia in 2013.

"Art has always been part of my life. It is what I excel at. All of my work is a collaboration with nature and with things that were. I first started to use recycled material in my art when I was in college to keep down the cost of material. That put me on a long journey that evolved over time, as did my art. Also, travels to many places like Santa Fe, with its Rio Grande high style and Native American art; the Adirondacks of New York and the craftsmen who built the great rustic camps in the area—all of this and more have bored into my psyche and shaped my eye. I consider myself an urban forester, before green was green. I have worked with recycled wood, urban milled wood, and other vintage material. I not only use this material, but I am influenced and inspired by it.

In my art, I aim to communicate through a sense of feeling or instinct. My art is not meant to have a meaning. Instead, I aspire to touch your sense of whimsy—to bring a smile to your face. Always working green and loving it." *Intothewoodsstudio.com* (Figures 6 and 7)

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FIGURE 6: Birch Chair by Larry Berger made of birch branches and recycled hardwood.

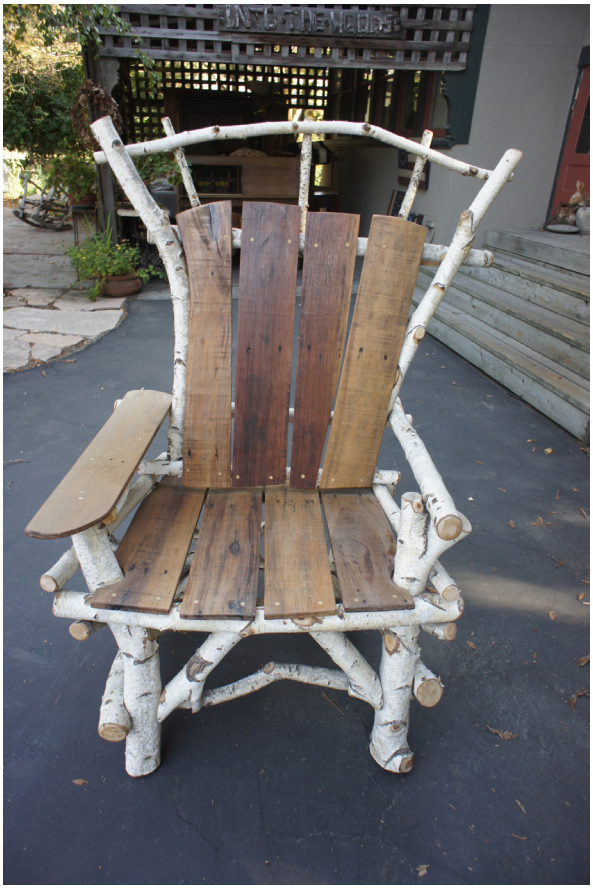
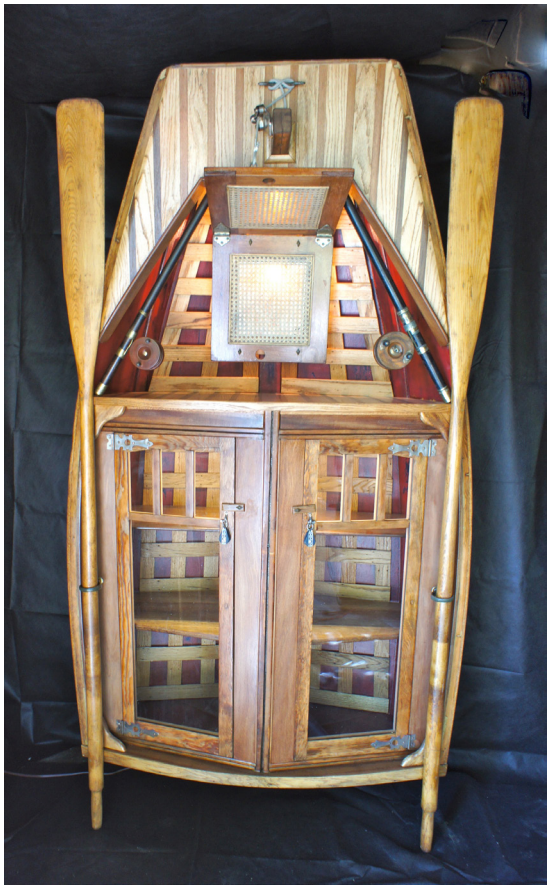


FIGURE 7: Larry Berger uses all recycled and vintage material in his *Day Sailor Boat Cabinet.*



Furniture Society member Stephen Hogbin of Ontario, Canada, keeps transportation to a minimum by taking on a public seating project close to his home. He not only cuts his own carbon footprint by working close by, but his beautiful benches are made with a local species of wood. They also encourage members of the community to enjoy nature rather than say, a Sunday drive.

Hogbin recently made two park benches for Collingwood, a town close to where he lives. They're made of eastern white cedar, which is prolific in the region, and constructed with joinery using only glue and white oak pegs. Stephen has found that this method is superior to metal fasteners in the freeze/thaw cycle of the year. The benches will sit on a boardwalk loved by bird watchers who flock to see the birds during migration, and for this reason, the form references wings. Collingwood is a boatbuilding town, so the form also references the lines in boats. His design facilitates comfort for people of different sizes. Tall people will find the center of the bench most comfortable and shorter people will enjoy sitting closer to the ends. *Stephenhogbin.com* (Figures 8, 9, 10)

Furniture Society member Brian Boggs of Asheville, North Carolina, is keeping trees out of the landfill by using urban felled trees—trees that have to come down to prevent building damage or are too diseased. He also traveled to Honduras and Peru to teach indigenous people how they can do the same.

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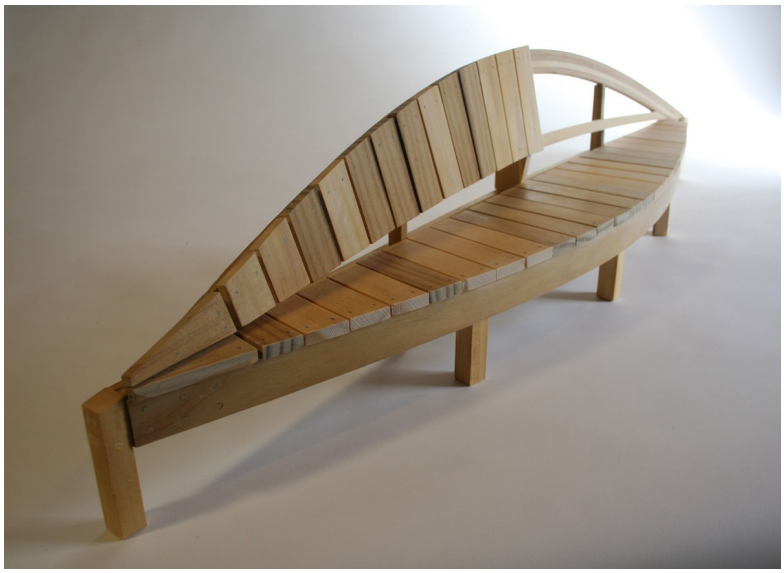

FIGURE 8: Maquette of Hogbin's park bench.

FIGURE 9: The park benches in progress in Hogbin's woodshop.

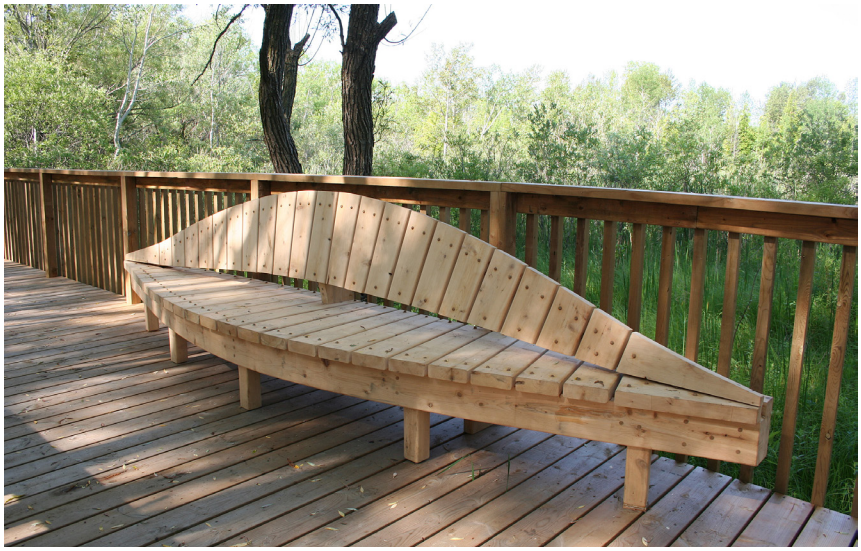

FIGURE 10: One of the park benches installed at the site.

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Boggs' team works with a lot of urban felled trees. He is in contact with several arborists from the area that let him know when they have a tree that might fit with what he makes. They recently picked up two Norway spruce trees that died standing on the Biltmore Estate. These are large enough to yield guitar-grade material so they will be sawing them as such. What is not guitar grade will become seats for a musician's chair. The musician's chair design uses spruce for the seat and back. Boggs' source for spruce is mostly from a tone woods dealer in New Hampshire, and he takes material that is not quite good enough for guitar faces. (Figures 11, 12)

In 1993 Boggs traveled to Honduras and Peru with Curtis Buchannan and Scott Landis to teach indigenous people how to make furniture using sustainably harvested local trees. This adventure led to a connection with a group of people who make dug-out canoes in La Mosquitia, Honduras. He worked to help them improve their boat-making practice, and in the

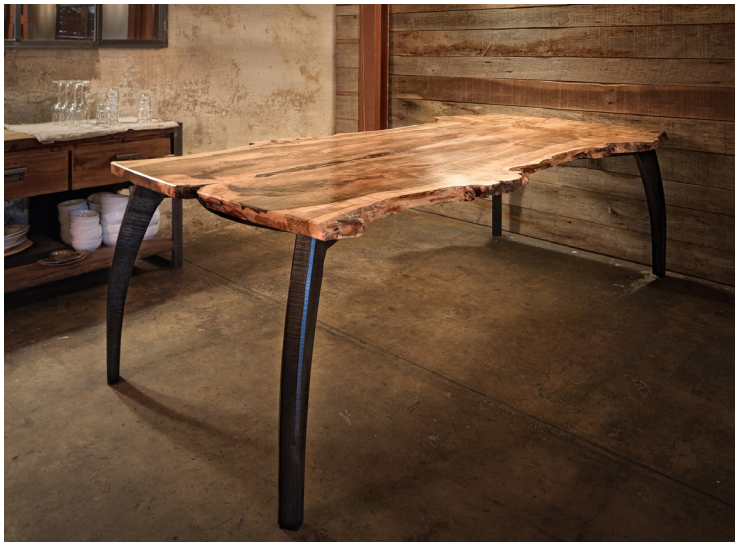
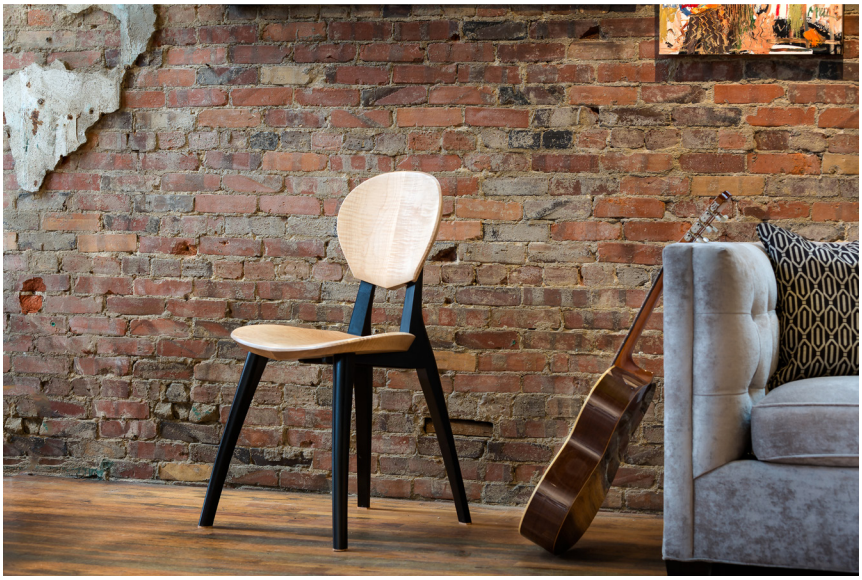


FIGURE 11: Live Edge Lily Dining Table made from a locally fell maple tree that was growing too close to a house. Textured, ebonized legs.

FIGURE 12: Sonus Guitar Chair in curly maple with ebonized black legs. Designed to benefit the physical health of musicians, who often feel discomfort and pain from sitting too long.



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process, Boggs learned that the old-growth trees have quite a bit of guitar-grade material in them. Through his help, the group now supplies Collings Guitar and Taylor Guitar companies with this quality wood. Only a few of these trees are cut per year, and each board is hauled out of the forest two boards at a time on mule back. In contrast to typical logging practice, this is done so that there is almost no damage to the forest floor.

Because of the glut of illegal wood on the market in Honduras, prices are too low to support legal and sustainable practices. They needed a "fair trade" market for the balance of wood—the material that does not quite make guitar grade. That's where Boggs comes in. He is using this off-fall for an outdoor line of furniture called Sunniva. He's trying to grow production and sales to a level that can consume all the wood that is not going to the guitar companies so the people working that forest are well supported. *Brianboggschairmakers.com* (Figures 13, 14)

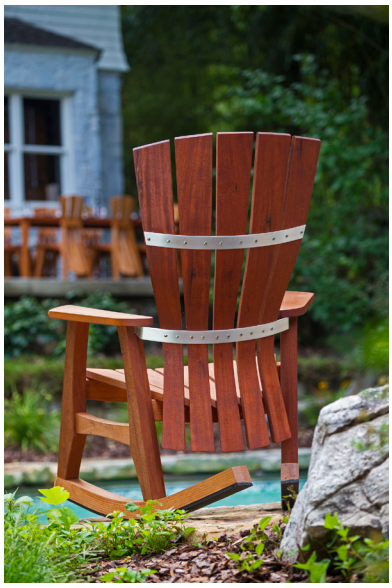

FIGURE 13: Sunniva Rocking Chair made of Honduran mahogany sourced from GreenWood Global, an organization that Boggs helped found. The chair has stop cut bent laminations, fully housed joinery, and recycled rubber treads

FIGURE 14: Sunniva Deluxe Swing made from Honduran mahogany, stop cut bent laminations and fully housed joinery wherever possible. Penetrating oil finish.

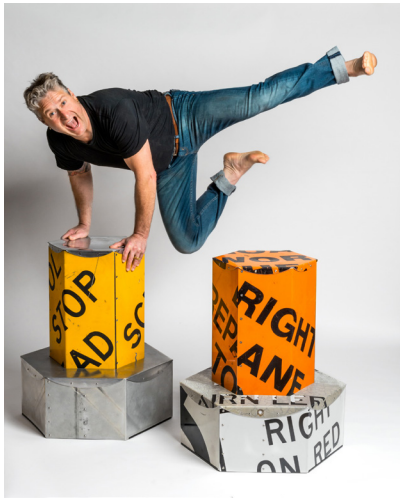

FIGURE 15: Derry Stools made in Providence, RI by Boris Bally, Rob Boyd, and assisted by Jon Hill and Lukas Winklerprinz. Design inspired by the Giants Causeway, CultureCraft project (and participant David Dryden) which was master-minded by Seliena Coyle and made possible by the Derry City Council (photo credit: Aaron Usher III).

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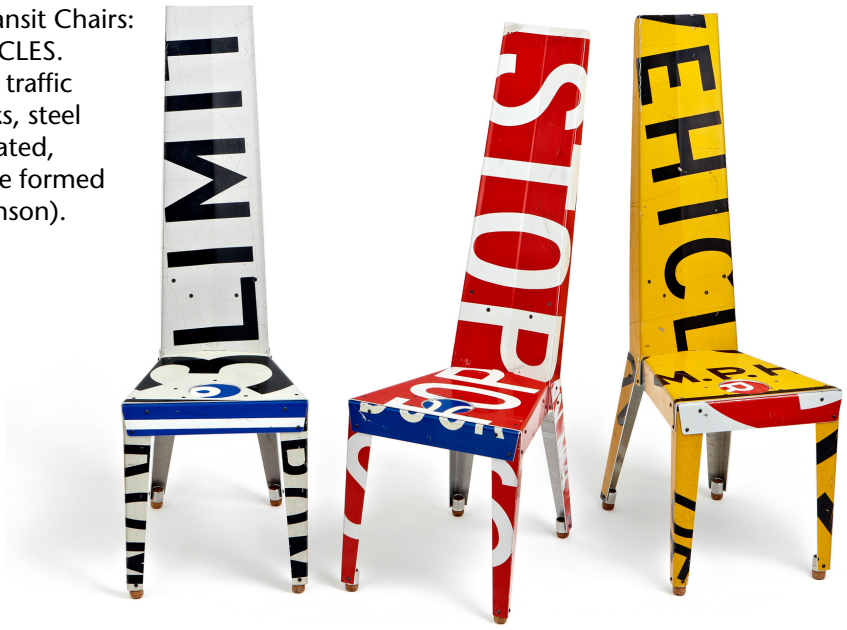

FIGURE 16: Three Transit Chairs: LIMIT, STOP, and VEHICLES. Repurposed aluminum traffic signs, champagne corks, steel hardware. Hand-fabricated, hand-pierced and brake formed (photo credit: J.W. Johnson).

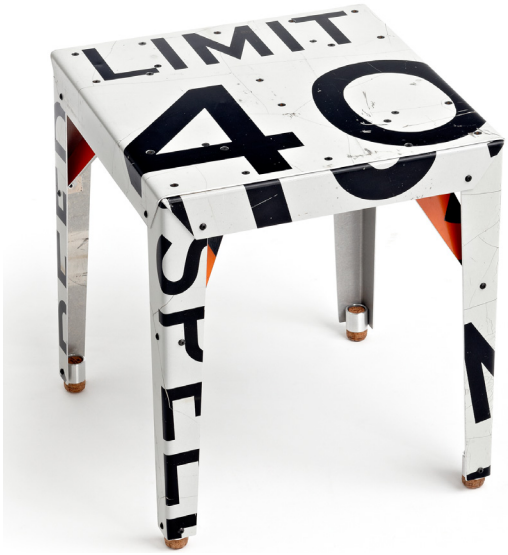

FIGURE 17: Transit Table, 18 x 18 x 20" high. Repurposed aluminum traffic signs, champagne corks, steel hardware. Hand-fabricated, hand-pierced and brake formed. (photo credit: J.W. Johnson).

Boris Bally, Furniture Society member, Swiss-trained metalsmith, and designer maintains a small studio business called Bally Humanfactured, LLC, in Providence, Rhode Island. Bally gives new life to aluminum traffic signs, recycling them into furniture. He was recently awarded the 2015 Rhode Island Council on the Arts Fellowship in Craft. He was a finalist in the 2013 Eco Arts Awards and the recipient of a 2012 Eco Arts Awards Honorable Mention for Repurposed Materials in Art & Design. He has earned several design, art, and craft awards and fellowships for his witty traffic sign designs. But Bally's designs don't stop at furniture. He expertly fashions traffic signs into wall art and platters for residential homes, floor tiles, municipal trash cans, and even large-scale public art. *borisbally.com* (Figures 15, 16, 17)

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Furniture Society member David Bonhoff of Goochland County, Virginia, uses reclaimed lumber, essentially keeping old barns out of our landfills.

Bohnoff is a professional woodworker with over 20 years experience in wooden boat-building, cabinetry, historic restoration and furniture making. He opened his studio 8 years ago, when asked to build a piece of furniture for the Virginia Department of Forestry. Utilizing an invasive species of tree brought to America in the late 18th century nicknamed "tree of heaven," he built a bench for them employing a variety of woodworking techniques. The goal was to test the material's abilities so it might become a new lumber resource for the construction and furniture industries.

When asked about his thoughts on the sustainability of reclaimed wood he replies, "(it) is not a sustainable resource—it has potential to run out. How I see it is that there are only so many old barns, warehouses, and sinker logs and only some of those will be salvaged. I see a lot of barns, old houses, and warehouses that are left to rot away. This indicates to me the resource is limited and makes it more unique and special, but not sustainable.

The use of reclaimed and salvaged wood has been an amazing experience for me. It is a beautiful and unique material that craftsmen of my generation have not seen or used much before. The rich patina of the old surface and the tight annular rings are beautiful to admire. The workability is superior and it is a dry and stable wood. I enjoy working with this material as well as trees harvested for new construction, storm damage, selectively harvested trees, and commercial certified lumber." *Bonhoffwoodwork.com* (Figure 18)

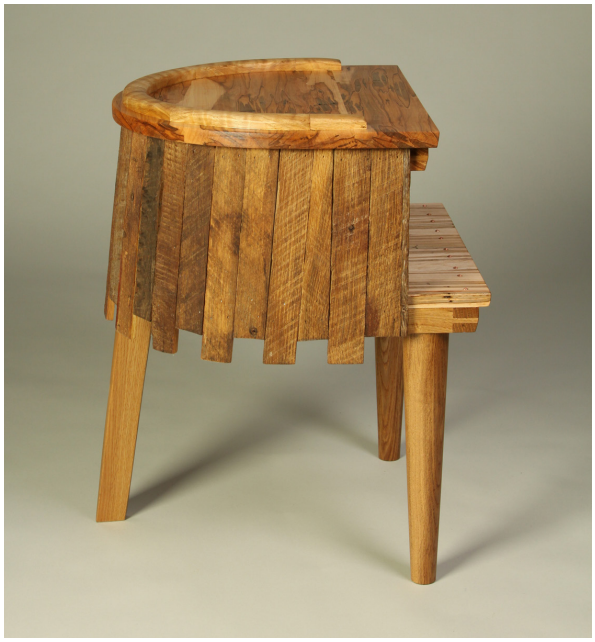

FIGURE 18: End table by David Bonhoff made of repurposed and reclaimed materials.

AT THE SMALL BUSINESS LEVEL

Beech Tree Woodworks in Olympia, Washington, has been dedicated to sustainability and nature from its inception in 2005. Nic James is owner and founder of the custom cabinet shop that is Forest Stewardship Council (FSC®) certified and offers zero or low VOC finishes. James is a graduate of the College of the Redwoods, a woodworking program in Mendocino County known for its high level of craftsmanship. The core belief of his business encapsulates

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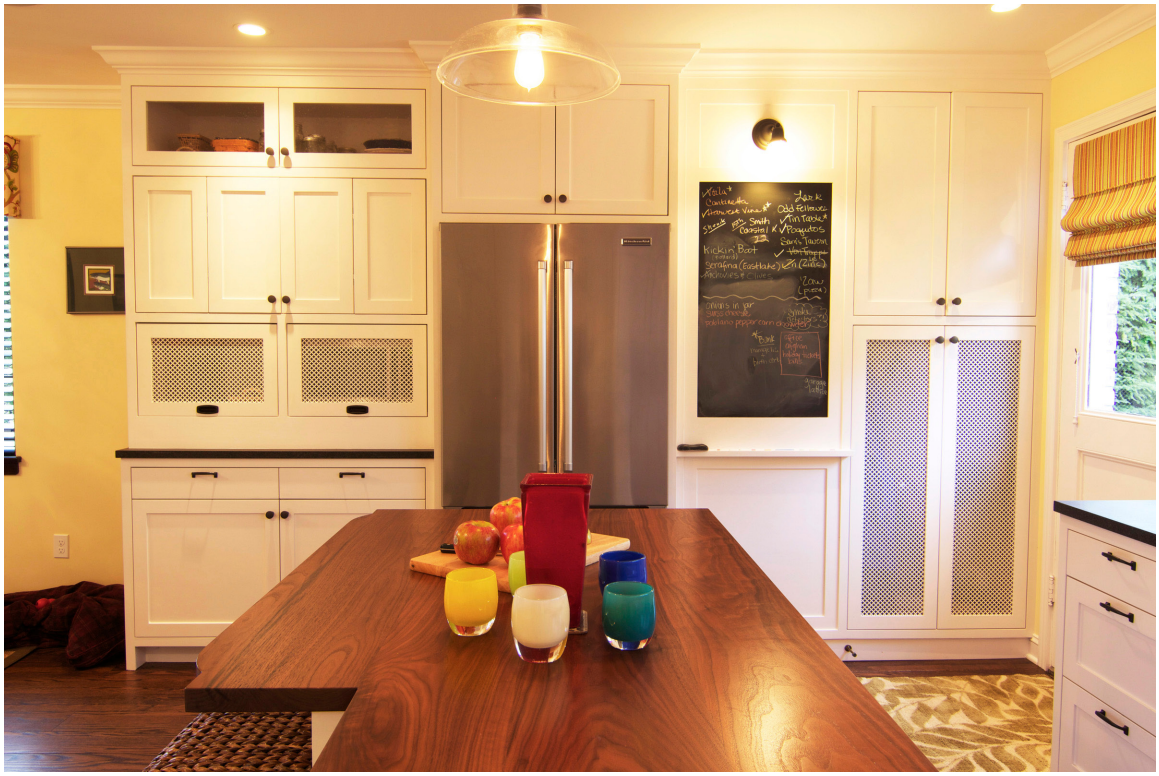
both a deep commitment to artistic design and to leaving the smallest carbon footprint possible. Having met three of his five full-time employees, I found them to be an impressive, skilled group, and each one committed to green building. The Beech Tree Woodworks team completes about 24 projects per year ranging from bathroom to kitchen cabinets and other residential projects that range in cost from a few thousand dollars to a couple hundred thousand dollars per job. James estimates that 25% of his clients seek him out based on his commitment to sustainability. Their mission is to create long-lasting green cabinets, furniture, and built-ins that will be passed down for generations.

There's something unique about Beech Tree's FSC® certification—it's a group certification through the nonprofit organization, Sustainable Northwest. I caught up with the Green Markets Program Manager, Paul Vanderford, who shared with me some encouraging details about the 10-year old program. Sustainable Northwest works to help small businesses across Oregon, Washington, California, Idaho, and Montana. The certification allows them to sell $10 million in FSC® certified wood annually, and businesses pay on a sliding scale. *Beechtreecustomcabinets.com* (Figures 19, 20, 21)

Furniture Society member Bruce Schuettinger of New Market, Maryland, not only keeps furniture in safe keeping and out of landfills as a furniture conservator, but he also powers his shop with solar energy.

Twenty-six photovoltaic panels provide all of the electrical power needed in all but two months during the winter for a shop that operates 5 days a week 9 hours per day. In addition,

FIGURE 19: A kitchen designed by JAS Design Build in Seattle and built by Beech Tree Woodworks. The painted wood is FSC® certified maple and poplar, painted with a low VOC latex paint. The island is FSC® -certified walnut.



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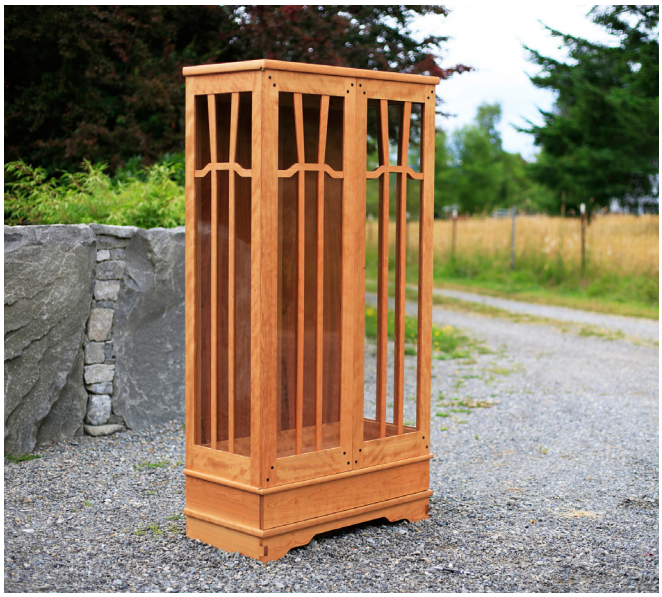

FIGURE 20: A Greene & Greene-inspired display cabinet by Beech Tree Woodworks made from FSC® certified cherry. Finished with Osmo, a hard wax/oil wipe on finish.

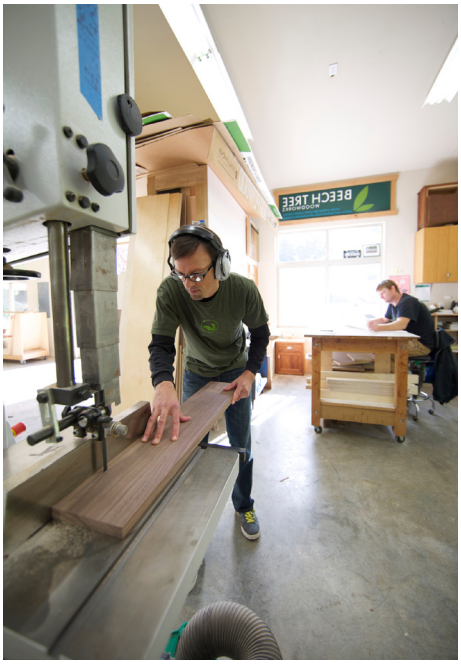

FIGURE 21: Beech Tree founder Nic James rough-mills walnut on the bandsaw. In the background, Jeff Kloppel designs a kitchen.

green shop practices include the use of low or no VOC coatings, staining, and adhesive materials; and the retention of small fragments of wood that may fall on the floor during cutting processes, which get reused in the production of furniture. Schuettinger also uses Richlite, a colored panel material made from 100% recycled paper, in combination with wood elements in the production of his newer furniture designs. His custom furniture business is committed to using locally harvested lumber from naturally downed trees or from "old stock" that is in their collection—some 2,000 board feet—which they've purchased from estates and old collections.

Schuettinger's other business is in the private sector of furniture conservation, mostly working with museums, government institutions and private collectors to preserve furniture.

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FIGURE 22: Conservation treatment of a rare American Federal Period paint and freehand gilt recamier from Philadelphia, Ca. 1815.

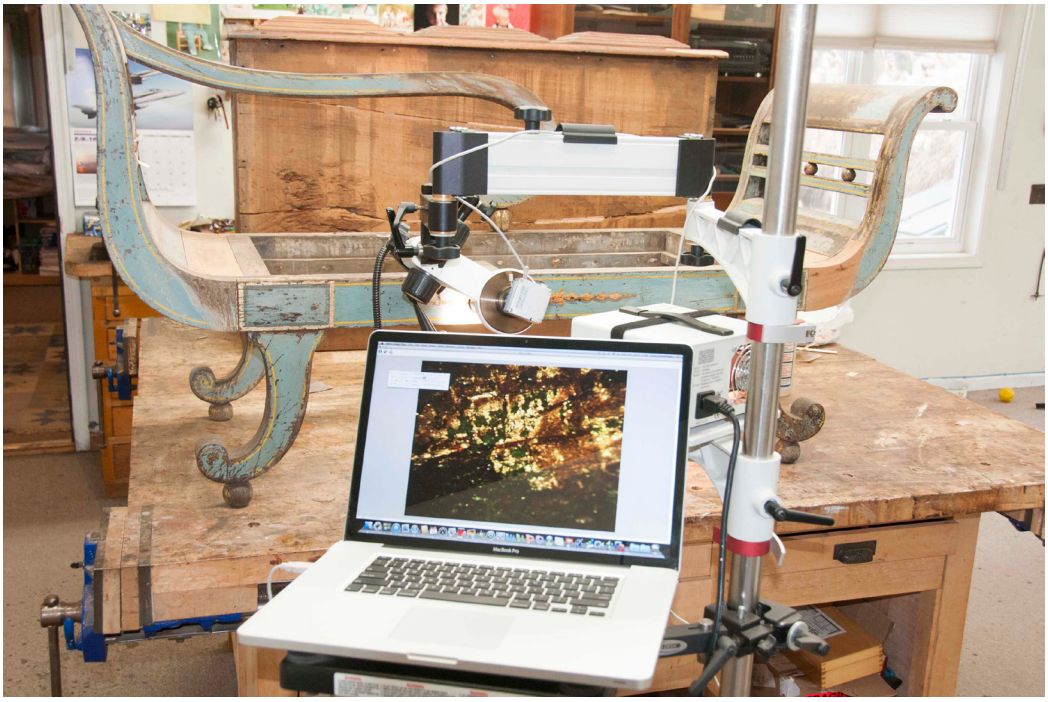
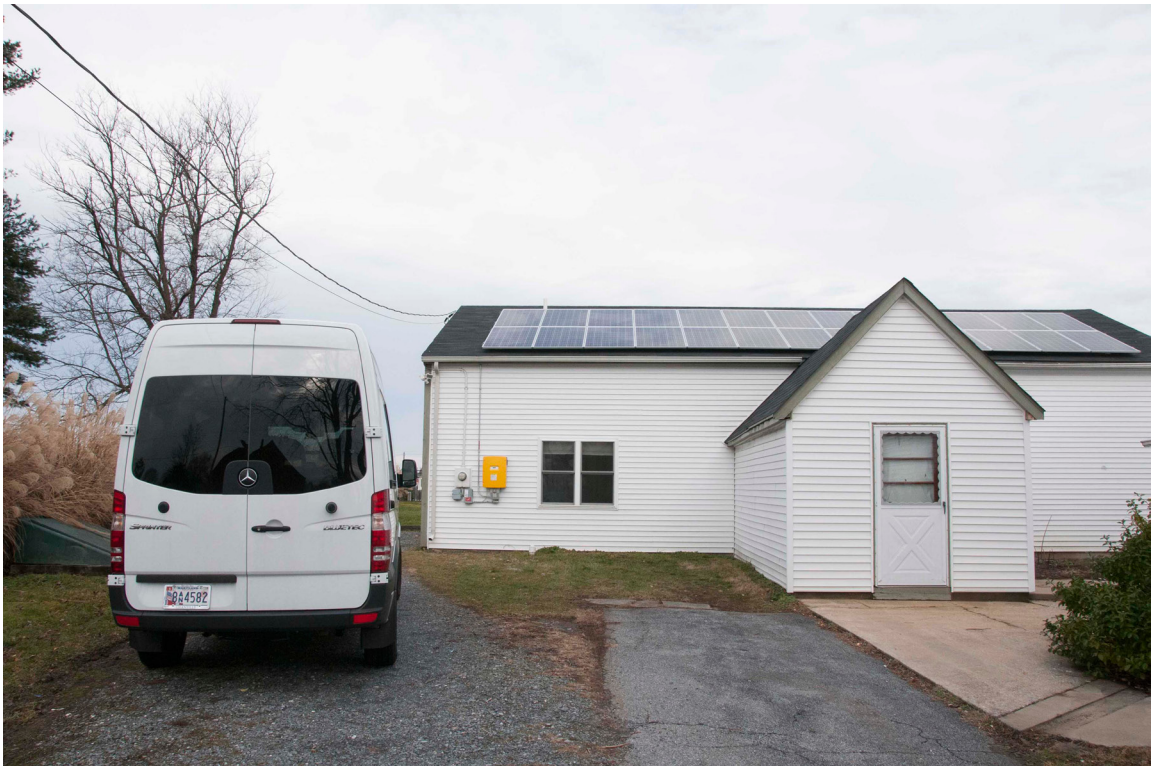


FIGURE 23: Bruce Schuettinger's shop powered by 26 photovoltaic panels.



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As a furniture conservator, he urges his clients to keep pieces in the family, and when that's not possible, he recommends the pieces be put into a museum environment to guarantee their safe haven. Having a conservator's knowledge of furniture history, materials, and construction methods shapes how he designs furniture for his custom furniture business. Schuettinger.com and *artinfurniture.com* (Figures 22 & 23)

ShopBot Tools of Durham, North Carolina, makes Computer Numerical Control (CNC) machines, not furniture. However, I include them because they make tools that make furniture—also known as digital fabrication. These machines are becoming quite affordable for small furniture businesses. This side of our industry is more rapidly growing than anything we've seen in quite a while in the furniture world. And digital fabrication can make furniture quite sustainable. A CNC machine is a tool that takes designs from computer software and cuts out or carves your design into any variety of materials. Materials can be managed for minimal waste during the design process, and the cutting of projects is very precise, allowing minimal spacing between cuts, thus more yield, and less waste. Designs for CNC work take place using computer software, where efficiency and planning is key.

Outside of CNC manufacturing, ShopBot Tools started a project called 100kGarages, a community of digital fabricators that anyone can tap into, supporting fair labor and making the transportation element of green furniture essentially carbon-free. Director of Marketing for ShopBot Tools, Jeanne Taylor, had this to say about the project, "Transportation matters—for furniture makers who take advantage of computer programs like Rhinoceros, SolidWorks, and other CNC–compatible software, the 100kGarages.com community allows designers to make connections with digital "fabbers" anywhere; these relationships allow furniture makers to save shipping costs while reducing carbon footprint.

For example, a designer in Boston can find a 100kGarages CNC fabber in San Francisco who is located nearby the end-customer. Instead of shipping furniture across country, carbon footprint is lessened by sending a digital file by email to the fabber to cut and deliver the product to the customer a few miles away.

One 100kGarages member, the designers at AtFAB, use the phrase "Ship files, not stuff." That's the kind of new distributed manufacturing process that 100kGarages.com is helping to encourage every day."

Affordable CNC machines allow small shops and furniture makers to create work that is repeatable, efficient, and minimize waste. Ultimately, ShopBot Tools CNC machines allow furniture to become more sustainable and at the same time increase the furniture makers' bottom line. The 100kGarages project allows them to reach beyond their local community without increasing their carbon footprint. Shopbottools.com and 100kgarages.com

AT THE EDUCATION LEVEL

The Furniture Society partners with and has within its membership numerous educational institutions across the Americas and overseas. Many of these institutions have a keen eye on sustainable practices, and are making a positive contribution to their community while teaching their students to be good stewards of the earth.

George School Woodworking and Design in Newtown, Pennsylvania, is a private Quaker high school founded in 1893. Furniture Society member, Carter Sio, heads the woodworking and design program which focuses on originally designed furniture. Sio emphasizes green practices in a few ways: milling lumber from campus trees, using locally-milled hardwoods

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where campus lumber is not used, encouraging rustic designs that lend themselves to green materials such as bamboo and recycled pallet wood.

The George School woodworking program mills around 75% of their lumber from campus trees, bringing in a portable mill and spending a few days each year milling and properly stacking lumber that will be used by students. By doing this, students learn where the wood they use comes from, the usefulness of recycling trees, and the importance of replenishing our forests. Sio encourages the use of rustic designs as well as the use of pallet wood. This is rare for a woodworking program to allow, let alone encourage. There are extra steps that need to be taken to ensure that reclaimed wood is clean of nails and other debris before being used with machines. Teaching this at the high school level prepares these students to repurpose materials down the road as well.

Bamboo in its raw form has been a constant in the program, and has been used in a number of different ways. Any wood that the campus does not provide (cherry, walnut, maple) comes from local mills sawing only local wood, which cuts down on the program's carbon footprint. Sio also leads by example. In his own work, he uses local woods and incorporates bamboo into his designs, giving his expertly-executed work a natural warmth while still being refined. *Georgeschool.org* (Figures 24, 25, 26, 27 & 28)

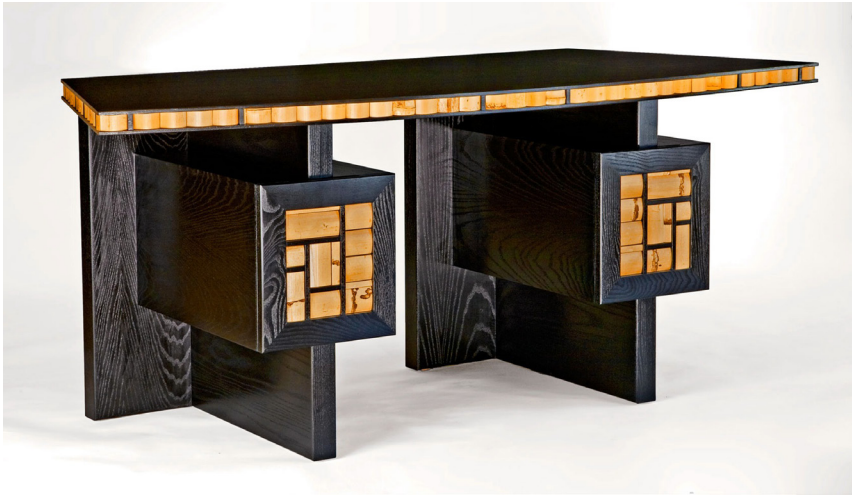

FIGURE 24: The bamboo and ash-veneered desk by Carter Sio is ebonized with India ink. It resides in the private collection of Joyce and Peter Heisen.

FIGURE 25: Night Table by student, Aiden Greer. The red oak log came from the school campus. The cutout in the front fits a laptop, and it sits on ebonized poplar legs with castors.

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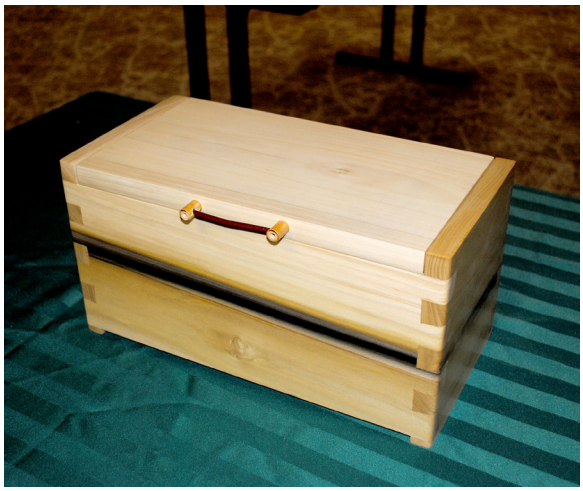

FIGURE 26: Poplar box with bamboo handle by student, Chun Yin Au. The box is a required project for all beginning woodworking students, and made from locally sourced poplar using only hand tools.

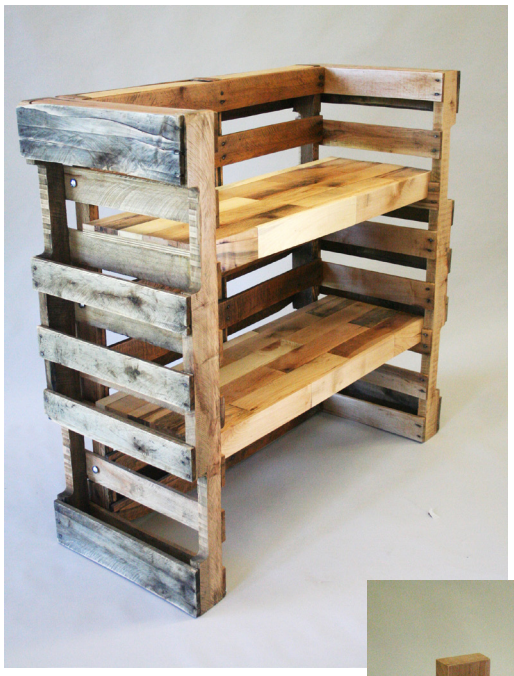

FIGURE 27: Pallet wood storage unit by student, Jack Dugan. Using pallets from campus dumpsters, he cleaned, sanded and modified them to fit the design of the piece.

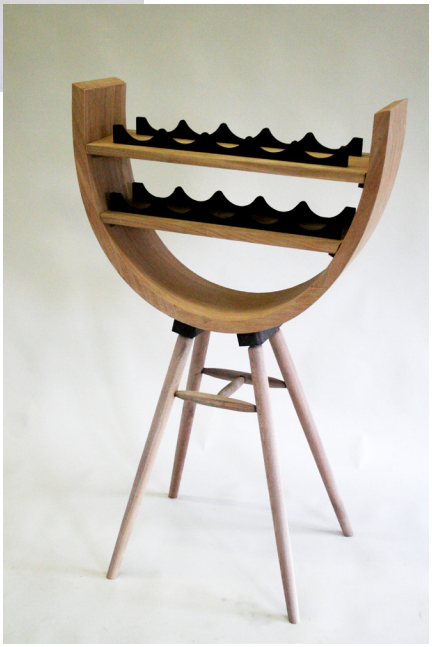

FIGURE 28: Wine storage rack by student, Paolo Alighieri. Made from locally sourced walnut.

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Palomar College in San Marcos, California works to divert urban trees from the landfill by converting them into lumber used by students at the school.

I've had the pleasure of both attending classes and teaching in the Cabinet and Furniture Technology Department. It boasts a full-scope woodworking program that has been graduating woodworking professionals for 60 years. The department has its own sawmill and drying kilns—the kilns are on loan from the Department of Forestry and CalFire. The staff work with local residents and arborists from around San Diego County to bring felled trees to the school's sawmill where they can be sawn, prepped, kiln-dried, and sold to the program's students and educators. This program was started in 2000 with the loan of a Wood-Mizer LT40 sawmill and a 4,000 board foot dehumidifying kiln. The facilities have recently been expanded with the addition of a Wood-Mizer LT70 sawmill and a 1,000 board foot vacuum drying kiln. In addition to the sawmills and kilns, the department owns a large flatbed truck to facilitate moving the large and heavy logs from the work site to the college. The lumber produced by the mill is noted for the unique species not typically available through commercial lumber outlets. *Palomar.edu/woodworking*

Indiana University of Pennsylvania (IUP) is working very much like Palomar College to divert lumber from landfills, but at the university level.

Over the last few years, Furniture Society member BA Harrington has worked hard to revitalize the Harvest to Use Initiative for the Wood Center at the university. For such an idea to take off within fine arts academia is quite promising. The shop technician, Joseph Lovenduski, for IUP's Art Department is tasked with the operation and maintenance of the Wood-Mizer sawmill at their campus location. He's worked with Harrington to prepare raw timber to more precise specifications for her classroom use, and the program has expanded to use the lumber regularly within the student curriculum. Harrington states, "IUP's Harvest to Use Program provides a unique teaching opportunity, as we are one of only a few university wood programs in the country with the capability of harvesting local lumber in-house with a portable bandsaw mill. In addition to teaching the comprehensive cycle of tree-to-lumber, I see this as a crucial situation for incorporating ideas around the meaning of materials, renewable resources, community sustainability, and collaboration into the art curriculum. "

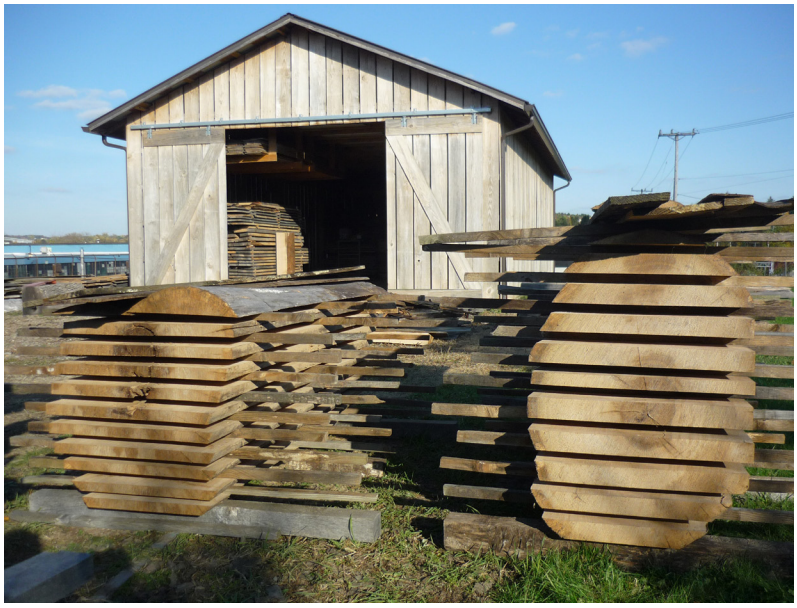

FIGURE 29: Freshly cut logs stacked outside the wood drying shed.

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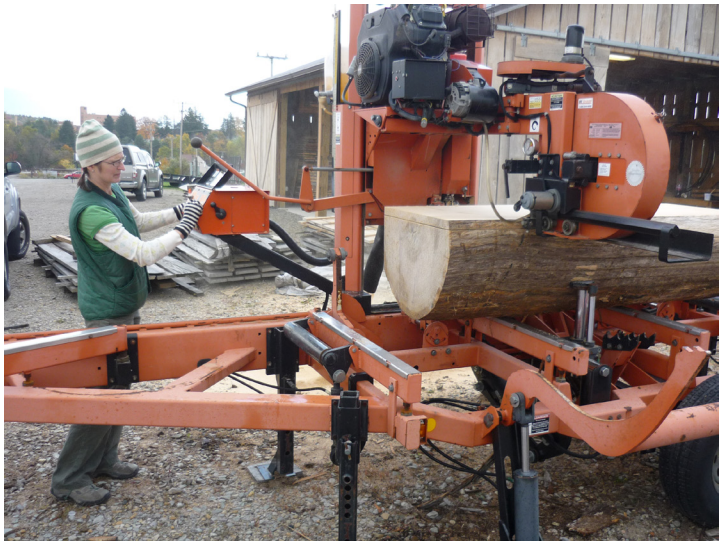

FIGURE 30: Professor Harrington operating the Center's Wood-Mizer portable bandsaw mill.

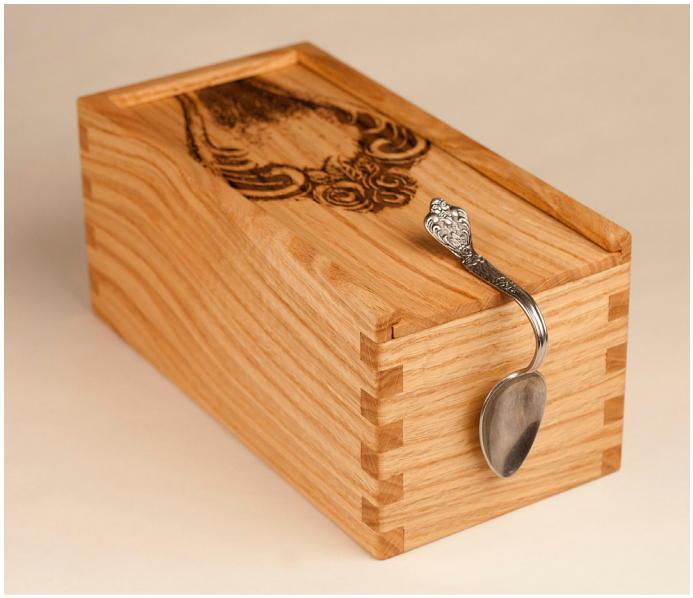

FIGURE 31: Heather Tabacchi's finger joint box was made in Harrington's Introductory Woodworking class from oak trees cut in 2006 to make way for the construction of new residence halls (photo credit: Heather Tabacchi).

Harrington co-directs the Center with Steve Loar. Together, they're currently developing a course around Harvest to Use that will count toward IUP's new Sustainability Studies Minor. The course will be hands-on and allow students to learn about all aspects of the tree to lumber process, including milling logs. Final projects will be geared toward each student's given field of study as well as their individual interests.

Through the help of Allegheny Arboretum at IUP, the Harvest to Use Initiative has been able to educate the community about the cycle from tree to log to furniture. Additionally, in 2006 the Wood Center helped the university receive Leeds Certification for new dorms by milling trees that were cut to make way for construction into lumber. Shop technician Joseph Lovenduski says about the program, "By raising mindfulness, we can show that any tree has a purpose and can be used. The program also shows that trees are not just turned into construction lumber or mulch. They can be used to create something stunning and evocative of the tree's initial beauty." *www.iup.edu/art/undergrad/studio/woodworking/* (Figures 29, 30, 31)

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CONCLUSION

Many furniture makers work with a focus on sustainability, and as Eriksmoen states above, the level of craftsmanship and low volume produced by groups like ours is certainly more sustainable than your typical furniture manufacturer. But, is that good enough? Can't we do better? Green furniture is a fairly loose term. Some of the people included in this article describe themselves as green, and others speak about the size of their carbon footprint. As furniture makers and industry professionals, it's our duty to educate on as broad a spectrum as possible. Not to simply bring awareness to green furniture, but to showcase how wonderfully varied the design capabilities are. Options are limitless. Designs have transcended the hippy furniture that many folks associate with sustainability and green furniture.

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