

# Designing Out Waste - Part III

Last in a series focusing on “reduce, reuse, recycle” as a guideline for project design

by Blair Seibert, AIA, LEED AP, CSBA, GPR

**A**s architects, we can make a big difference for our clients and for the environment by following the classic “reduce, reuse, recycle” guideline.

In parts one and two, I examined *reducing* waste and *reusing* materials (you can find those articles here:

Reduce:

<http://www.aiafv.org/html/news/articles/newsletters/April%202011.pdf> (pg 4)

Reuse:

<http://www.aiafv.org/html/news/articles/newsletters/April%202011.pdf> (pg 8)

In this article, we’ll take a look at the final block in our foundation: **recycle**.

Whenever we set out to decrease construction and demolition waste, we should remember that our general contractor is our partner in working to reduce, reuse or recycle debris from any project. We should also remember that recycling serves as the **last** link in protecting the environment and conserving energy. Reducing comes first, reusing second.

A benchmark for any project is to divert 50 percent of construction and demolition waste from our landfills. That’s the minimum requirement for construction projects that follow California-created green rating systems, such as GreenPoint Rated, the Collaborative for High Performance Schools and the 2010 Green Building Standards Code, known as CALGreen. As a side note, since some communities have no recycling abilities, the LEED rating system avoids a recycling requirement but does provide points for reaching various diversion levels.

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To stimulate a market for materials with recycled content, architects should select and specify materials with recycled content. You can even approach clients as a health-conscious mom might persuade her kids to have healthier food. Show them their project’s design/finishes with recycled content materials first, rather than after you’ve described it using virgin materials. Help them see the value of using recycled materials. Indeed, they can become part of the project’s distinctive palette – and a point of pride for your clients.

As architects, we establish ground rules in the specifications and verify the process through submissions. The actual recycling and diversion of waste materials remains the responsibility of the general contractor and subcontractor. Once we’ve urged our clients to explore the benefits of recycling, we can further encourage them to exceed the code’s minimum diversion rates. We can even include the names of qualified recycling companies in the specs. This is easy in California by visiting California Recycles’ website and typing in the zip code to find local companies, or the material to be recycled, if maximum value from waste material sorting is desired.

<http://www.calrecycle.ca.gov/ConDemo/Recyclers/Rec-clerList.aspxMaterialTypeIDList=&CountyIDList=19&FacilityName=&FormsAccepted=&MinimumQuantityAccepted=&QuantityAcceptedUnitsID=>

At a minimum, the CALGreen residential code (section 4.408) and non-residential code (section 5.408) requires construction teams to provide a waste management plan that:

- identifies materials to be diverted from landfill
- specifies whether materials will be comingled for separation at a diversion facility or sorted onsite to be delivered to various recycling facilities
- identifies the diversion facility where materials will be taken
- identifies construction methods used to reduce waste generation
- specifies weight or volume of materials to be diverted.

Documentation must be revised during construction to reflect actual activities and final documentation must be provided to the enforcing agency at the end of the project. A sample construction waste management plan is available as an appendix to CALGreen.

For non-residential projects, there’s an additional requirement for the diversion of organic materials. CAL Green requires that all organic matter from land clearing: soil, trees, stumps, rocks and vegetation -- be recycled 100%.

You may wonder why this organic material is so important. A green construction project manager and colleague describes it this way -- “The top 6-12 inches of soil is golden,” she says. It takes 100 years to make the dark, nutrient-rich topsoil that covers the land, so when we go in with earth movers and bulldozers, we destroy an irreplaceable element. When the project’s completed, we add insult to injury with potentially polluting fertilizers, amendments and additives we amend our scarified soil with to “improve” it. If your project must remove the topsoil, consider stockpiling the soil if you can.

In CALGreen, there is an exemption for projects whose jobsites are located in areas beyond the haul boundaries of a diversion center. Those distances are not clarified, so it’s wise to look into these guidelines if your project is isolated. A sample Construction Waste Management Plan is available on page 52 of CALGreen. A worksheet and acknowledgement form follow the plan.

# Schedule of Events

In Los Angeles alone, 50 percent of all construction and demolition debris has been diverted. To ensure the city continues its progress, waste haulers will soon be required to obtain certification from the city of LA to haul C&D waste in LA. Some cities like Santa Monica are taking deposits from the demolition and general contractors along with their permits, to make sure they meet compliance requirements – and can provide needed documentation at the end of the projects. If they can't fulfill these requirements, the city uses these deposits to offset the costs of additional land-filled materials.

Now, because the code requires recycling, you may be wondering, Why should I give it much concern? That's a good question. Let's go back to the guideline, "reduce, reuse, recycle." The waste we generate comes from decisions architects make about the materials that should be used, as well as design strategies we take and our knowledge of real life construction practices. While contractors in California will be well versed in diversion efforts, contractors in other states may not be. Since CALGreen has codified this information, architects and contractors in other states may choose to incorporate it into their specs. You can find it here : <http://www.bsc.ca.gov/CALGreen/default.htm>.

If you'd like more information on the practice of reusing and recycling construction material, have a look at this excellent study funded by the Army Corps of Engineers called "Concepts for Reuse and Recycling of Construction and Demolition Waste." It includes a list of recommendations for the private sector to follow in order to improve waste management practices. [http://www.cecer.army.mil/techreports/lam\\_rere/lam\\_rere.flm.post.pdf](http://www.cecer.army.mil/techreports/lam_rere/lam_rere.flm.post.pdf)

Think you can make a difference? Absolutely! A few years ago, I worked on a 10,000-square-foot tenant improvement project. The tenant wanted a Gold Level LEED-CI certification. Two points toward that goal were available by recycling 75 percent of the construction and debris materials. After questioning the contractor about the destination of the waste given to his "regular waste hauler" we learned that although they provided recycling in some parts of Southern California, they did NOT provide the service in Santa Monica! We switched waste haulers immediately to contract with one which provided debris recycling and diversion and were able to earn those precious LEED points for our client.

As an architect, you make a difference in the waste generated and landfilled in your projects from design to construction completion. You just have to think a little differently about "waste". The first step the green construction project manager suggests is not calling the debris "waste". It's really leftover construction material, isn't it? □

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Thur-Sat	May 12-14, 2011 <b>AIA National Convention</b> New Orleans Convention Center
Sat	May 14, 2011, 10:00 am <b>ADA Seminar</b> AIA SFV Chapter Office
Wed	May 18, 2011, 8:00 am <b>Breakfast Program</b> "Going Green with Plumbing & Kitchen Cabinets" Universal Appliance & Kitchen Center
Thur	May 19, 2011, 6:30 pm <b>Associates Mixer</b> Meet, Eat & Greet! AIA SFV Chapter Office
Sat	May 21, 2011, 10:0 am <b>Northridge Vision UDAT Meeting</b> Valley Economic Alliance, Sherman Oaks
Wed	May 25, 2011 6:30 pm <b>Monthly Evening Program</b> Timely Frames, Pacoima
Wed	June 1, 2011, 6:30 pm <b>NCARB and You</b> Jaffe Residence, Tarzana
Wed	June 22, 2011, 6:30 pm <b>Monthly Evening Program</b> TBD
Sat	July 9, 2011, 10:00 am <b>"Toolbox Series" Seminar — Session 1</b> AIA SFV Chapter Office
Sat	July 23, 2011, 10:00 am <b>"Toolbox Series" Seminar — Session 2</b> AIA SFV Chapter Office
Wed	July 27, 2011, 6:30 pm <b>Monthly Evening Program</b> TBD