

# Construction Industry Pollution Prevention

This tip sheet is part of a series of pollution prevention tip sheets focusing on different business sectors. The construction sector comprises establishments primarily engaged in the construction of buildings and other structures, heavy construction, additions, alterations, reconstruction, installation, and maintenance and repairs. Establishments engaged in demolition or wrecking of buildings and other structures, clearing of building sites, and sale of materials from demolished structures are also included. This sector also includes those establishments engaged in blasting, test drilling, landfill, leveling, earthmoving, excavating, land drainage, and other land preparation.

## Why Construction?

As of 2009, construction was the third largest industry in Alaska, paying the state's second highest wages and employing nearly 21,000 workers with a payroll of more than \$1 billion. It accounts for 20 percent of Alaska's economy and currently contributes approximately \$7 billion to the state's economy, according to the sixth edition of the "Alaska's Construction Spending Forecast," published by the Construction Industry Progress Fund and the Associated General Contractors of Alaska.



The construction industry also affects numerous other business sectors. According to the Spending Forecast, construction spending generates activity in industries that supply the construction process, including sand and gravel (mining), equipment purchase and leasing (wholesale trade), design and administration (business services), and construction finance and management. In addition, the payrolls and profits from construction activity support businesses in every community in the state by generating jobs in business and professional areas such as restaurants, medical offices and retail stores.

## P2 for the Construction Industry

Pollution prevention comes in many forms for the construction industry, both because the industry covers such a broad range of activities but also because so much can be done. Activities range from designing greener buildings and using fewer or cleaner building materials to reducing pollution at construction sites and recycling materials during the construction process.

## Green Building

Green or sustainable building is the practice of creating healthier and more resource-efficient models of construction, renovation, operation, maintenance, and demolition. Construction is just one part of the process of green building but it is the step in the process when all the planning and design is put into practice and it can make or break the sustainability of a building project.

### Aspects of Green Building

- **Energy:** Designing and operating buildings to use energy efficiently and to use renewable sources of energy, including solar, wind, and biomass.
- **Water:** Designing and operating buildings to use water efficiently.
- **Materials:** Using building materials that, in comparison to competing brands, have a reduced effect on the environment throughout their life cycle (e.g., recycled content, low toxicity, energy efficiency, biodegradability, locally sources, and/or durability).
- **Waste:** Reducing the waste generated during construction, remodeling, and demolition.
- **Indoor Environment:** Designing and operating buildings that are healthy for their occupants.

Most of the materials decisions may already be made by the time construction begins but during the bidding and construction phase, it is important for the construction contractor to work closely with the rest of the team (designers, architects etc.) so that everyone is educated and knowledgeable about the project as a whole.

A contractor must understand new materials that may be part of the building's design in order to understand how they affect the project. There may be specific reasons that a material is specified and unless the contractor understands these reasons, he or she may try to substitute cheaper or more readily available materials for the job, thus affecting the sustainability of the project and/or building being constructed.

## Green Building Resources

Cold Climate Housing Research Center [www.cchrc.org](http://www.cchrc.org)

Energy & Environmental Building Alliance  
<http://eeba.org>

Energy Star [www.energystar.gov](http://www.energystar.gov)

USGBC – LEED certification [www.usgbc.com](http://www.usgbc.com)

## Local Resources

Anchorage Sand & Gravel 907-349-3333  
[www.anchsand.com](http://www.anchsand.com)

Central Recycling Services 907-748-7400  
[www.centralrecyclingservices.com](http://www.centralrecyclingservices.com)

Glacierstone 907-762-5971  
[www.glacierstone.com](http://www.glacierstone.com)

Thermo-Kool of Alaska 907-376-3644  
[www.thermo-koolofalaska.com](http://www.thermo-koolofalaska.com)

## Site Pollution Prevention

Total environmental quality should be maintained at the construction job site, particularly if the project is a renovation where occupants are still in close proximity or if the project is near a sensitive environmental area, such as wetlands. Be sure to maintain best practices for stormwater run-off and air quality, as well as proper waste management.

- Store materials and fuels in a contained and covered location that is fully on the permitted site and not in a right-of-way unless proper permits are obtained.
- Do not wash out brushes in street or dump residue in storm drains. Use a washout area with a berm and plastic sheeting to collect and contain liquids and prevent run-off to nearby areas.
- Control the perimeters with erosion and run-off control devices such as silt fences, straw wattles. If possible, source erosion control products locally.
- Apply coarse gravel or install steel shaker plates at all site entrances and exits to limit offsite sediment tracking that can lead to water or air pollution issues.
- Dirt and gravel onsite should be covered.

- Earthmoving equipment should be cleaned regularly to avoid tracking of dirt. Any dirt tracked to and from the site should be cleaned up immediately.



- Storm drains must be protected at all times with perimeter controls, such as straw wattles, gravel bags or compost socks.
- Dumpsters should always be covered with a tarp. Areas around dumpsters should be swept daily, perimeter controls should surround all. Plan for space for more than one dumpster.

## Site P2 Resources

Extremely detailed Best Management Practices have been established so refer to the resources below for complete lists.

National Pollutant Discharge Elimination System (NPDES), U. S. EPA, Stormwater Pollution Prevention Plans for Construction Activities (<http://cfpub.epa.gov/npdes/stormwater/swppp.cfm>) -- Provides best management practices (BMPs) for erosion, run-off, and sediment control.

Best Management Practices ([http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min\\_measure&min\\_measure\\_id=4](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min_measure&min_measure_id=4))

## Local Resources

Erosion Control of Alaska offers Filtrex, a compost-based erosion-control system, made locally. 907-569-9000

EverGreen Nursery & Garden Center offers silt socks, blankets, and berms made using 100% locally produced mulch and compost products. U.S. Compost Council certified products. 907-344-2588, [www.gogreenwithevergreen.com](http://www.gogreenwithevergreen.com)

Green Earth Landworks offers EM-1 compost socks for erosion-control projects. U.S. Compost Council certified products. 907-243-7893, [www.greenearthalaska.com](http://www.greenearthalaska.com)

## Recycling Options

Make recycling part of the plan. Determine what materials will be the largest components of your project and concentrate on recycling these materials. Wood, concrete, dirt and asphalt will most likely make up the majority of your potential waste and are easily recycled or reused.

Then build recycling into your bid. Determine what can be recycled locally and how it needs to be managed. For example, what materials can be commingled and what need to be collected separately. If you pay to have your waste hauled away, specifically designate that you want the loads or debris boxes taken to a recycling facility.

Keep the C&D recyclables separate from your trash. Designate specific containers on site for certain materials and then place large, clear signs on the containers. Keeping materials separated at the site will allow more options for recycling and will lower your disposal costs. Facilities often charge less for clean loads (only one material) of wood, greenwaste, concrete/asphalt, and dirt.



Educate everyone involved in your project about the salvage, reuse, and recycling aspects of your project. Print your container signs in as many languages as needed to reach all the workers. Encourage and acknowledge efforts that are made to recycle.

### Local Waste/Recycling Haulers

Alaska Waste  
907-563-3717 [www.alaskawaste.com](http://www.alaskawaste.com)

Central Recycling Services  
907-748-7400 [www.centralrecyclingservices.com](http://www.centralrecyclingservices.com)

Ramsey and Sons Refuse  
907-277-3867 [www.277dump.com](http://www.277dump.com)

Red Box Refuse  
907-561-0220 [www.redboxrefuse.com](http://www.redboxrefuse.com)

Besides asphalt and concrete rubble, four other materials consistently appear in large quantities as construction and demolition debris. These are wood, drywall, paper and metals.

## Wood

- Design floor plans to make efficient use of whole 4'x 8' panels and standard lumber lengths.
- Develop incentives for framing contractors and crew to reduce wood waste.
- Coordinate with suppliers to take back or buy back unused wood, pallets and crates.
- Ship pallets/packing crates to a pallet recycler.
- Chip unpainted, untreated wood waste for use as yard mulch or boiler fuel.
- Use recycled wood or wood alternatives.

## Drywall/Gypsum

- Design interiors to make efficient use of whole 4'x 8' drywall sheets.
- Keep all drywall cut offs in a central, dry location so workers can use them elsewhere in project.
- Donate scrap drywall to low-income housing, or trade it to other businesses through materials exchanges.
- Ask suppliers to haul scrap drywall back to their plant and recycle it into new drywall.

## Paper

- Ask manufacturers to reduce unnecessary paper packaging on the materials you buy from them.
- Work with manufacturers to deliver items in reusable packaging that can be returned.
- Separate corrugated cardboard and office paper for recycling through municipal recycling program.
- Buy materials, such as ceiling tiles, made from recycled paper fibers.

## Metals

- Design floor plans to make efficient use of standard lengths of heating duct materials, metal pipes, wiring, siding and gutters.
- Ask clients if they would like to keep scrap for their own future projects. Train employees to save unused metal items for future use.
- Coordinate with manufacturers to take or buy back unused metal products.
- Separate and recycle all metal scrap that isn't reused.

## Deconstruction Instead of Demolition

If you're tearing down a building, consider deconstruction as a way to conserve resources. Visit the Deconstruction & Reuse Network at [www.reusenetwork.org](http://www.reusenetwork.org) to learn more.

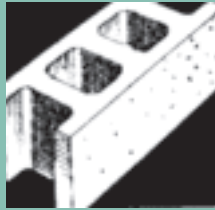
## Additional Green Building Concepts

- Select prefabricated or modular materials such as trusses, wall sections, and pre-cut studs and joints to eliminate waste from on-site fabrication. These materials can be constructed locally in a centralized location where a full recycling program can be put in place. [www.nahb.org](http://www.nahb.org)
- Use SIPS (structural insulated panels), a high-performance building system for residential and light commercial construction that is extremely strong, energy efficient and cost effective. [www.sips.org](http://www.sips.org)

### Local C&D Recyclers

#### Anchorage Sand & Gravel

**(AS&G)** accepts clean asphalt pavement demolition and concrete demolition. AS&G also sells recycled products that will help you meet your sustainable building goals and meet LEED standards. Learn more at [www.anchsand.com](http://www.anchsand.com).



**Central Recycling Services (CRS)** offers recycling for the following construction materials:

- Commingled debris
- Gypsum scrap
- Non-conforming hard rubble
- Clean concrete, bricks, and stone
- Clean wood and lumber
- Asphalt and metal
- Landclearing debris (stumps, brush, trees)
- Demolition and renovation debris

Prices range from \$15 to \$63/ton to drop off at the facility. Call for specific requirements. CRS also sells several recycled products that will help you meet your sustainable building goals. Learn more at [www.centralrecyclingservices.com](http://www.centralrecyclingservices.com).

**Schnitzer Steel** accepts all types of ferrous and nonferrous metals. Learn more at [www.schnitzersteel.com](http://www.schnitzersteel.com).

### General Resources

Alaska Center for Appropriate Technology (ACAT) ([www.acat.org](http://www.acat.org)) – workshops about energy efficiency, net zero energy homes, lighting, green building etc.

Alaska Department of Environmental Conservation, Div. of Air Quality ([www.dec.state.ak.us/air/index.htm](http://www.dec.state.ak.us/air/index.htm))

Alaska Manufacturing Extension Partnership (AMEP) ([www.ak-mep.org](http://www.ak-mep.org)) – Lean manufacturing

Alaska Materials Exchange -- post unwanted materials ([www.greenstarinc.org/ame](http://www.greenstarinc.org/ame))

Associated General Contractors of Alaska ([www.agcak.org](http://www.agcak.org)) – training on LEED, stormwater pollution prevention plans, erosion control and more

Construction Industry Compliance Assistance (CICA) ([www.cicacenter.org](http://www.cicacenter.org)) -- assistance with stormwater, C&D debris, hazardous waste, air quality concerns, wetlands and water bodies protection, endangered species protection and green building. State resource locator for most topics

Habitat for Humanity ReStore ([www.hfhanchorage.org/restore](http://www.hfhanchorage.org/restore)) -- accepts reusable construction materials

Municipality of Anchorage Dept. of Health and Human Services, Environmental Services, Air Quality Program ([www.muni.org/departments/health/environment/airq/Pages/default.aspx](http://www.muni.org/departments/health/environment/airq/Pages/default.aspx))

Municipality of Anchorage Solid Waste Services ([www.muni.org/sws](http://www.muni.org/sws)) – information about solid and hazardous waste disposal, recycling options, asbestos abatement and more

National Demolition Association ([www.demolitionassociation.com](http://www.demolitionassociation.com)) – a C&D recycling forum, stormwater planning, LEED certification information, greenprint for the future



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Good for Business ~ Good for the Community ~ Good for the Environment