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Set Design

- The designer needs to factor the environment into the design of the set, and should work with the art director, construction coordinator and foreman, scenic charge, and set decorator to conserve resources, and to choose materials that are safe for both the workers and the environment.
- Cooperation and good communication between the designer and the director is crucial in the planning stages of the build to avoid expensive, wasteful design changes. Also, with careful planning, the design and shoot schedule can be coordinated to allow for reuse of things like set walls, platforming, and lighting grids, saving both money and resources.

Construction

- [Lauan](#) is manufactured with endangered rainforest hardwood, and should be avoided. [The Environmental Media Association \(EMA\)](#) has gathered a list of directors who have pledged to help reduce the use of the tropical plywood Lauan, in favor of available, environmentally responsible and cost-effective [lauan alternatives](#).
- Build all set walls and pieces with resource conservation, disassembly and recoverability in mind. Whenever possible, use screws that can be removed instead of staples, and avoid applying adhesive to materials that will make separating them at strike difficult or impossible.
- Check the designated wood scrap/offcut area first before using new material.
- [Formaldehyde](#), present in most construction material, has been identified by [OSHA](#) as carcinogenic. Sawdust should always be kept to a minimum with proper dust collection systems.
- Cutting and routing composite materials can release harmful vapors from heating adhesives and resins, so ventilation in the carpentry area is essential.
- Avoid fossil-fuel-based plastics, foam, and other polluting materials, substituting wood, canvas, paper, and cardboard and other biodegradable materials whenever possible.
- Use [low VOC, solvent-free construction adhesive](#).
- Rechargeable batteries in power tools should be fully drained before recharging to extend their life.

CONSTRUCTION VENDORS

Green Depot

6951 New State Road
Philadelphia, PA 19135
Phone: 215-333-3810 ext: 7902
Fax: 215-333-3878

Contact: Kerri Owsiany
KOwsiany@GreenDepot.com
www.greendepot.com

They carry FSC certified dimensional lumber and NAUF (no added urea formaldehyde) plywood. They also have [low VOC, solvent-free construction adhesive](#).

Russell Plywood

South Gate Industrial Center
3 McCullough Dr.
New Castle, DE 19720
Phone: 800-787-7355
Fax: 302-324-5146

They have a "Green Compliant Product Portfolio", including [Purebond FSC](#)

certified, NAUF plywood, particleboard, and melamine.

Fessenden Hall Inc.

1050 Sherman Ave.
Pennsauken, NJ 08110
Phone: (856) 665-2210
Fax: (856) 665-6518
Email: terrygery@fessendenhall.com

www.fessendenhall.com
They carry [Uniboard's NU Green NAUF](#) particleboard and melamine, and [Sierra Pine's NAUF MDF](#).

Kane Hardwood (Collins Pine Co.)

95 Hardwood Drive
Kane, PA 16735
Phone: 814-837-0117
Fax: (814) 837-8401

Contact: Randy Byers
rbyers@collinsco.com
www.collinswood.com
Manages the [FSC-certified Collins Pennsylvania Forest](#) in the Allegheny

Mountains of northern Pennsylvania. They carry FSC certified dimensional lumber and particleboard.

Homasote Company

932 Lower Ferry Road
West Trenton, NJ 08628-0240
Toll Free: 800-257-9491

Phone: 609-883-3300
Sales: Ext. 1500
Tech Support: Ext. 1332
www.homasote.com
Manufacturer of sheet goods made from 100% recycled newsprint and less than 2% paraffin wax. Their new PINnacle 440 3/8" thick tackboard panels are a smoother finished panel that is paint ready with no additional finishing necessary.

Grips

- Set up an area where offcut lauan/homasote/plywood/plexiglass and other sheet goods, and 1x, 2x, etc., can be stored and used for smaller jobs, rather than cutting from full sheets and lengths.
- Designate waste cans specifically for small wood scraps and sawdust only, so that they are kept separate from other trash, and can easily be recovered by your recycler.
- Sawdust, silica dust, and many other dusts from sanding and liquid evaporation become airborne when they are dry swept, causing a significant respiratory health risk to the crew. Wet mop or **HEPA** vacuum dust whenever time allows, and use a spray bottle with water or solvent-free sweeping compound when sweeping.

Paint

- Many materials scenics use contain skin, eye, and lung irritants, and can be carcinogenic and toxic to the environment. The scenic charge needs to educate the industrial/scenic crew on proper handling and disposal of materials, and make it a top priority throughout the build.
- Look for [Green Seal](#) certified paints that emit zero or low levels of volatile organic compounds (VOCs), hazardous air pollutants, and ozone-depleting compounds. They cannot contain any proven carcinogens, mutagens, reproductive toxins (except titanium dioxide). The packaging must also contain a minimum of 20% recovered material.

GRIP SUPPLIES

McMaster-Carr

200 New Canton Way
Robbinsville, NJ 08691-2343
Phone: 609-689-3000 or 609-259-8900
Email: nj.sales@mcmaster.com
They carry petroleum free sweeping compound, and biodegradable hydraulic and air compressor lubricating oils.

- The **ACMI AP (Approved Product) Seal** is another important certification to look for on artist materials. While primarily concerned with identifying materials that do not pose significant health risks, products with this stamp are often less polluting to the environment.
- Paint is one product that is not necessarily better to buy in bulk sizes. Gallon cans are made of recyclable steel, which can be melted down almost indefinitely, with minimal loss in the quality of the raw material. Five gallon buckets are made out of fossil fuel based #2 HDPE plastic, which can only be “downcycled” once into a much lower grade product, such as plastic lumber, that must then be landfilled at the end of its life.
- Steel paint cans can still be recycled with small amounts of dried latex paint residue in them, so after getting as much paint as possible out of the can (regular kitchen spatulas work great) leave the lid off to air dry, and then recycle the can and lid. Never rinse excess paint down the drain.
- Keep a large sheet of cardboard in the scenic area to get excess latex paint off of rollers and brushes before washing. Each layer can dry out, so the sheet can be used repeatedly.
- Brushes and roller covers that are going to be used again within a short time can be stored in biodegradable ziplock bags, rather than repeatedly rinsing excess paint down the drain.
- Leftover paints of similar chemistry can be consolidated by color/sheen, so that they can easily be tinted and reused for a different project, or used as a primer or base coat. Make sure that these mixtures are clearly labeled, and **never** mix solvent based oil paint with water based paint.

PAINT VENDORS

D.L. Richie Paint N' Decorating

5241 Brightwood Road
Bethel Park, PA 15102
Phone: 412-833-0237
www.dlrichie.com
They carry **Green Planet** zero VOC paints (soy resin and clay based).

Kilian Hardware

8450 Germantown Ave
Philadelphia, PA 19118-3302
Phone: 215-247-0945
www.kilianhardware.com
They carry **The Old Fashioned Milk Paint Co.** products.

The Real Milk Paint Co.

11 West Pumping Station Rd.
Quakertown, PA 18951
Phone: 800-339-9748 or
215-538-3886
www.realmilkpaint.com
They carry milk paint and Soapstone solvent-free wax (an alternative to Butcher's wax).

Greenable

126 Market Street
Philadelphia, PA 19106
Phone: 215-922-6066
www.greenable.org
Carries **Mythic***, **Yolo Colorhouse***, **AFM Safecoat***, and **Durasoy*** brands.
Contact: Angelo Anastasio

Green Depot

6951 New State Road
Philadelphia, PA 19135
Phone: 215-333-3810 ext 7902
Contact: Kerri Owsiany
KOwsiany@GreenDepot.com
www.greendepot.com
They carry **AFM Safecoat*** paint and low VOC caulk.

Home Depot

1651 S Columbus Blvd.
Philadelphia, PA 19148
Phone: 215-218-0600
For additional store locations, go to www.homedepot.com
Their zero VOC paint line is called **The Fresh Aire Choice.***

Lowes

2106 S. Christopher Columbus Boulevard
Philadelphia, PA 19148
Phone: 215-982-5391
For additional store locations, go to www.lowes.com
Their zero VOC paint line is called **Olympic Premium***.

Old City Paint & Decorating (Benjamin Moore)

210 W Girard Ave
Philadelphia, PA 19123
Phone: 215-625-8300
For additional store locations, go to www.benjaminmoore.com
Their zero VOC paint line is called **Eco Spec***.

M A B Paints

2100 N Broad St
Philadelphia, PA 19121
Phone: 215-765-7018
For additional store locations, go to www.mabpaints.com
Their zero VOC paint line is called **Enviro-Pure***.

Philadelphia Paint Store

3851 Aramingo Ave
Philadelphia, PA 19137
Phone: 215-743-4555
www.phillypaint.com
Their zero VOC paint line is called **Pure Performance***.

Sherwin Williams

1001 Washington Ave
Philadelphia, PA 19147
Phone: 215-389-4801
For additional store locations, go to www.sherwin-williams.com
Their zero VOC paint line is called **Harmony***.

*Products marked with an asterisk are low or zero VOC, and less toxic than most latex paints, but are still petrochemical based

For more brands, see the **Greenseal Recommended Paint Listings** at: www.greenseal.org/findaproduct/paints_coatings.cfm

- Avoid all oil-based paints that include toxic paint thinners, like mineral spirits, turpentine, acetone, xylene, and denatured alcohol. Make sure you wear NIOSH-approved respirators with the proper cartridges when using solvents, and remember that the warnings regarding proper ventilation also applies to the workers around you.
- Establish a solvent mixing area separate from the water based mixing tables, where the fumes can be properly ventilated, and keep all containers closed when not in use.
- If you use oil paints, **never** wash brushes in the sink without soaking them in paint thinner first. Jars used for cleaning brushes must be tall enough to soak brushes in and still close tightly. The paint sediments will settle to the bottom overnight, so you can reuse the turpentine, mineral spirits, etc. many times over. Wash hands with baby oil instead of solvents.
- Even water-based latex paints can contain harmful ingredients like formaldehyde, ammonia, hazardous pigments, and solvents like ethylene glycol (antifreeze). These are all toxic when absorbed through the skin, or if inhaled for long periods of time, so use with caution.
- Oil-based paint, brushes, and rags used with solvents are considered hazardous materials, and cannot be disposed of in regular trash.
- Brushes, even inexpensive chip brushes, are not meant to be disposable. Take care off them.
- Use canvas drop cloths without the plastic lining.
- Avoid spray paints and adhesives. If they must be used, only use them while wearing a respirator in a well ventilated area, like outdoors or in a spray booth.
- Repeated exposure to “respirable” silica dust from [sanding joint compound](#) and paint can cause many respiratory health problems, including lung cancer and [silicosis](#). Wet sand whenever possible, avoid making the dust airborne with fans, and make sure to wear a mask or respirator with the proper particulate filter efficiency level (nuisance dust masks are not sufficient protection.)
- Joint compound contains polyvinyl acetate, preservatives like formaldehyde, and solvents. When drying time allows for a slower setting joint compound, use [Murco 100](#), which is solvent and preservative free, and contains only natural binders.

ADDITIONAL SCENIC SUPPLY VENDORS

Murco 100 Natural Joint Compound

253 E Cemetery St

Pulaski, TN 38478

Phone: (931) 363-5851

www.murcowall.com

Solvent and preservative free, with only natural binders.

Green Earth Office Supply

1400 Coleman Ave, Ste H16

Santa Clara, CA 95050

Phone: 408-353-2096

Fax: 408-969-0909

Toll Free: 800-327-8449

www.greenearthofficesupply.com

info@greenearthofficesupply.com

They carry biodegradable quart cups, and cellophane rolls to replace acetate.

Clear Bags

4872 Highway 64 East

PO Box 307

Selmer, TN 38375

Phone: 800-328-1847

www.clearbags.com

They carry Earth First brand biodegradable, compostable clear ziplock bags and rolls to replace acetate.

For more environmentally friendlier art supplies, see

ACMI's (Art and Creative Materials Institute)

Searchable Certified Product List at

www.acminet.org

SAFETY EQUIPMENT

Arbill

10450 Drummond Road

Philadelphia, PA 19154

Phone: 800-523-5367

Fax: 800-426-5808

Email: orders@arbill.com

www.arbill.com

Local company that carries nitrile gloves, respirators/cartridges, dust masks, Tyvek suits, earplugs, safety glasses, and many other worker safety products.

- Use water based glues, like Elmer's or Sobo whenever possible, and avoid highly toxic two part epoxies, spray adhesives, rubber cement, etc.

- Try [powdered biodegradable glue](#) or [100% wheat paste](#) (without vinyl additives and preservatives).

- Use [solvent-free butchers wax](#).

- Use [low VOC caulk](#).

- Polyurethane two-component resins, expandable foams and fiberglass resins are extremely toxic, and should only be used after specific precautions have been taken. Contact United Scenic Artists Local 829, Industrial Hygienist Monona Rossol 212-777-0062 or at actsnyc@cs.com regarding the safe use of these materials.

- Use [biodegradable ziplock bags](#) for brush/roller storage, [biodegradable quart cups](#) instead of plastic, and [biodegradable cellophane](#) instead of acetate for tracing/elevation covering.

- Buy [reclaimed rags](#), and rinse and reuse them as much as possible before discarding.

Set Dressing/Props

- Rent instead of buying whenever possible.

- Buyers for set deck/props should choose fuel efficient vehicles, and make every effort to shop locally.

- Purchase used cardboard boxes, or choose a supplier that uses recycled cardboard with a high percentage of post-consumer content.

- Replace commonly used cleaners, like ammonia, with less toxic alternatives (see **Safer Cleaning Products** on page 15.)

Greens

- Purchase plants, soil, etc. from local nurseries and urban farms that do not use excessive pesticides, and sell native species. Donate plants to the community after the shoot.

BIODEGRADABLE GLUE

MagiGlue

1450 S. Rolling Road
Baltimore, MD 21227
Phone: 410-455-6319
Toll Free: 1-888-892-8408
www.athenaenvironmental.com
Plant based, preservative free biodegradable glue powder manufactured in Baltimore.

SET DRESSING SUPPLIES

American Box and Recycling Co.

3900 North 10th Street
Philadelphia, PA 19140
Phone: 1-800-970-3777
215-599-2350

Fax: 215-599-2361

E-mail: Kim@amboxco.com

They not only sell used cardboard boxes, but are an excellent local recycling resource (see

Recycling: All Inclusive in the recycling listings.)

Green Packaging, Inc.

650 North Cannon Avenue
Lansdale, PA 19446
Phone: 877-822-0552
Local: 215-368-7265
www.greenpackaginginc.com
Local supplier of 100% post consumer waste cardboard boxes, biodegradable corn starch packing peanuts and [PaperNuts](#) and [Prairie Eco Pak](#) sustainable packaging materials.

GREENS SUPPLIES

The Organic Mechanic Soil Company, LLC

110 E Biddle St.
West Chester, PA 19380
Phone: (484) 557-2961
mark@organicmechanicsoil.com
www.organicmechanicsoil.com

Wholesale producer/distributor of organic potting soil. For smaller quantities, see their list of retailers [here](#).

Greensgrow

2501 E. Cumberland Street
Philadelphia, PA 19125
Phone: 215-427-2702

www.greengrow.org

Local urban farm with a variety of plants, potting soils (including Organic Mechanic), and mulches.

Redbud Native Plant Nursery

1214 North Middletown Road
Glen Mills, Pa 19342
Phone: 610 358 4300
info@redbudnativeplantnursery.com
www.redbudnativeplantnursery.com
Extensive selection of trees, shrubs, grasses, vines, ferns, wildflowers and aquatic plants for the mid-Atlantic region. Pick-up only, they do not ship plants.

Electrics

- The electrics crew are often left with the task of turning off unused equipment. Make sure that the crew is told at the beginning of the production that while the electrics crew is there to help safely get power to their work area, it is the responsibility of every crew member to turn off their work lights, compressors, fans, etc. when they are finished with them.

Special Effects

- Many hazardous chemicals are used in the special effect department, and it is crucial that this area be located in a section of the shop with adequate ventilation and exhaust capabilities.
- The welding area should be kept 35 feet from any combustibles, including sawdust and flammable paint. Fire extinguishing equipment must be available and maintained.

Transportation

- Carpool whenever possible.
- Instead of just reimbursing for parking or mileage, consider financial incentives to reward the crewmembers who use public transportation.
- For getting around the set, opt for alternate forms of transportation whenever possible. Encourage the crew to ride bike, scooters, etc. around the set instead of gators or cars.
- To conserve fuel, the scenic charge, construction foreman, and key grip should make every effort to coordinate their supply runs and deliveries to locations.
- Unload any unnecessary weight during deliveries, to increase fuel efficiency.
- Do not keep production vehicles running when not in use. Diesel emissions contribute to asthma, chronic bronchitis, and lung cancer, and Philadelphia has [anti-idling laws](#) aimed at reducing toxic air pollution and conserving fuel.
- Optimize fuel efficiency by accelerating slowly and smoothly, and maintaining the speed limit.
- Recycle all motor oil, antifreeze, etc.
- Contract with buses/trailers that are fuel efficient, preferably biodiesel.
- Purchase biodiesel blends for trucks and equipment. While B5-B20 are the current standard, some engine manufactures are starting to accept higher biodiesel percentages.

ALTERNATIVE TRANSPORTATION

TransitChek

Delaware Valley Regional
Planning Commission
Office of Commuter Services
190 N. Independence Mall
West 8th Floor
Philadelphia, PA 19106-1520
Phone: 215-592-1800
Fax: 215-592-9125
Toll Free: 800-355-5000
Email: TransitChek@dvrpc.org
www.dvrpc.org/gettransitchek
An employer-offered commuter
benefit program to encourage
regional public transit.

ALTERNATIVE FUEL STATION

Center City Shell Station; S&B Auto

1135-45 Vine Street
Philadelphia, PA 19107
215-928-9181
Open 24/7
Contact: Steve Mack
Sells B20 Blend Biodiesel and E85
Ethanol