Using Every Part of the Car

One of my ongoing goals is to emphasize reuse in solarpunk media – both through my own projects and whenever I get the chance while helping others through suggestions or editing.

There's a wealth of stuff all around us which could be repurposed in creative ways, and solarpunk art and fiction has a wonderful opportunity to demonstrate that ingenuity and thrift.

A lot of that stuff is in cars. So here's some notes I've pulled together from various online discussions and from many people's recommendations in solarpunk spaces. It's not exhaustive, its probably not all good advice, but it should be good enough for a writer to casually drop into a description of a room or workshop, or for an artist to include in the background of a scene. Something that shows that this isn't a scratch-built future, that they're repurposing existing stuff wherever they can.

Think of all the weird ways postapoclyptic movies dress the sets with misused items from the present – here's a somewhat practical guide to solarpunk set dressing with the guts of cars:

The big stuff:

- Depending on the vehicle, its frame (if it has one), axles, and wheels can be used to make a trailer, cart, or similar. (I've definitely seen trailers that were just the back half of a pickup truck with a tongue and hitch welded on.) Bonus: the bearings in car wheels tend to be better than those used in regular trailers.
- The transmission from a vehicle could be rigged up to a wind/water mill to adjust rotational velocity of a sawmill or other industrial application. Certain power tools, like lathes, also sometimes use vehicle transmissions: https://www.practicalmachinist.com/forum/threads/truck-transmission-for-lathe.240574/
- Unordered List ItemSteel leaf springs can be removed from their bundles (they're long, flat pieces of steel stacked and bound together with strips of steel) and are favorites of blacksmiths for making swords and knives because of the type of steel used.
- Earthships can be made with stacked tires packed with rammed earth: https://earthship.com/systems/garbage-management/
- Old automotive engines can be used in chemical reactors that turn waste methane (from landfills etc) into methanol: https://news.mit.edu/2024/emvolon-turns-automotive-engines-into-green-fuel-chemical-plants-1119

The Electronics:

- Alternators can be used to generate a wide range of amperage and voltage, suitable for different needs, including (in a few specific cases) welding: https://diysolarforum.com/threads/diy-low-cost-generator-from-vehicle-alternator-alternating-generator.1843/
    - The terminology here is a little confusing – early cars had DC generators (sometimes called dynamos), then they switched to AC alternators. But modern 'emergency generators' still use alternators hooked up to an engine. So if you're looking for something to convert motion to electricity, perhaps to attach to a water wheel, a vehicle alternator (and some belts to adjust the speeds) could do the job.

    - Some caveats: suitable vehicle generators and motors will likely work better, and to get an alternator to work you may need to either include a power source of 12v to excite the alternator, or to to replace certain internals to include permanent magnets. You'll need to mess with the gear/pulley ratio to get the right (high) speed too.
- The electronics in most cars are usually all designed to run off 12 volts, which can be very convenient for a household with solar panels depending on their setup. If a household has a low-voltage DC battery bank (some do, some don't) then dropping the battery voltage a few times to power car parts comes with a smaller efficiency loss.
- These 12 volt electronics include things like the cab lights, headlights, radio/entertainment system, backup/surround cameras (perhaps for a security system?), all of which could be placed in a home on a circuit providing the same power they'd get in a car.
- LED headlights make for decent grow lights. Different models hit different parts of the spectrum, but generally they're sturdy, run cool, and don't take much power. They might not be as fine-tuned for plants as a dedicated product but they're common and probably not being used for much in a solarpunk society.
    - Alternative use: outdoor lights, indoor spotlights, light on a wagon, rickshaw etc.
- A car air conditioner could cool some small storage room decently. With big living rooms, it would have difficulty https://permies.com/t/177638/Convert-car-air-conditioner-home
- Cars have lots of small electric motors with various advantages and disadvantages: you can pull motors from the blower, power windows, and windshield wiper motors have a fair bit of torque and can be decent actuators for some projects (I've seen them included in robotics projects).
    - The blower and motor could be used for ventilation elsewhere.
- Starter motors are tricky – they're designed to provide a lot of sudden torque to briefly turn the engine, and not to run for a long time. So they don't fit a lot of our usual use-cases for electric motors. I've seen forum posts that describe using them for hoists (like to lift heavy things) but that's about it so far.
- There's plenty of wiring in a car which can all be reused as long as the gauge is correct for the new use.

Automotive Relays are used to enable a low amperage circuit to switch a higher amperage circuit on or off, making the control systems safer. One example given was switching on heaters in a thermal storage water tank. There's a fair number of forum threads where people link arduinos to automotive relays to control things the arduino couldn't handle on its own.

- Car batteries have long seen alternative uses – they might be the one car part used most outside of cars. As vehicles go hybrid and electric, their bigger, more powerful batteries become more common. Even when they weaken overtime, the lower power density doesn't matter much for fixed installations where weight isn't a factor, so old electric car batteries show up in homes and local grid storage systems: https://www.motherjones.com/environment/2023/11/old-ev-batteries-solar-power-grid-backup-b2u/

Moving fluids:

- Various pumps and tubing can be used for moving fluids (though the original purpose/contents will restrict what you can use them for).
- The tubing, tanks, pumps, and other parts used for windshield washer fluid are probably the safest car-fluid-handling components to reuse for non-car things (with a lot of rinsing and cleaning): https://www.mountainbuzz.com/threads/reusing-wiper-fluid-jugs-for-drinking-water.97053/

    - Possible uses could include aquariums and hydroponic setups (This may stand out to fish keepers though, who are very cautious around how they handle the water for their aquatic friends and who would be leery of traces of methyl alcohol wiper fluid contaminating it. https://www.nano-reef.com/forums/topic/376583-windshield-wiper-water-pump-as-ato-pump/)
- Car radiators work well for heat exchange, their intended purpose whether they're in a car or not. This can be part of systems for heating or cooling.
- Copper brake line can also be used in heat exchanges. I should note though that brake fluid is dangerous stuff.
- Fuel and brake lines should definitely not be used for things like potable water. But you wouldn't be using potable water for heat exchange anyways, so contamination from the radiators, tubing, or brake line won't make much difference there.

Odds and Ends:

- Inside the rubber squeegee part of windshield wipers is a long thin strip of good quality spring steel. Lockpicking folks like it for making tools.
- Catalytic converters might be useful for other kinds of filtering? Maybe not in wood stoves though: https://permies.com/t/96864/Misusing-car-parts-cleaner-cooking
- Certain vehicle exhaust parts can be used to make rocket stoves: https://permies.com/t/15611/Auto-exhaust-muffler-pipe-parts

https://permies.com/t/129517/Homemade-Wood-Stove-Propane-Tank

Cosmetic stuff:

- Seats: couches, chairs, porch swing, etc, fabric, foam stuffing for stuffed animals.
- Windows are tricky because the shapes are weird, which can make framing them difficult, but they could be set into clay or concrete or similar building materials.
- Hoods, roofs, and body panels offer some large sheets of metal which could be used for sheds.

Bonus: Car Infrastructure:

- Street and freeway signs present a large, flat, sturdy sheet of aluminum. People have used the big overhead highway signs as roofs for sheds, and smaller signs could be overlapped like shingles or TIG or MIG welded together to get the same effect.
- Asphalt is very recyclable – you basically can just break it up, grind it up, and reheat it to use again. Pavement from freeways and parking lots could be recovered and used in the maintenance of smaller roads, bike paths, etc.
- The bases of streetlights often include a breakaway component, which is sometimes a good source for aluminum for casting or milling.
- The overhead signs on freeways are supported by large metal frames, often a truss-type structure, which could be reused. There's some good terminology here.
- Concrete can be cut/broken up and reused https://slrpnk.net/post/11909269

Last but not least, with Internal Combustion Engine cars, there's always conversion to run on woodgas (something I've depicted in a photobash) for some limited uses, or conversion to electric. And if all

else fails, you can always melt them down for your society's steel manufacturing needs – electric arc furnace smelters running off a green grid, recycling, are about as close to zero emission steel as you're likely to get, and the metal is already refined so I think you could get pretty tight control over the quality on the output.

But I hope you'll consider some of the above possibilities too. The parts are out there, we might as well use them.

Thanks for reading! Like I said, this is by no means an exhaustive list, so if you know of something I've missed, or see something I got wrong, I'm happy to edit it!

Secondary bonus: some resources of contaminants you're likely to see wherever cars and car parts have been abandoned or salvaged:

- https://eeuroparts.com/blog/how-toxic-are-the-chemicals-in-your-car/
- https://www.epa.gov/sites/default/files/2015-10/documents/sector_m_autosalvage.pdf