

The Motorcycle Workshop

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This advice on how to outfit a motorcycle workshop started as my own search for information in preparation for building one. I sought advice from those with the most experience, motorcycle restorers on the Triumph Twins and Royal Enfield Interceptor listserves. I then did some research on the web, where most of the information was for car restorers, but generally applicable to motorcycle workshops. This is also a work in progress. I will revise it and add to it as I continue through the research, planning and building phases of my own workshop.

I'd especially like to thank Gary Elder, Todd Ethridge, Terry Barber, Pete Snidal, Hans from New Zealand (whose last name I don't have), Steve Shaffer, Neil McKelvie, and Michael in North Carolina (whose last name I don't have either). You will all see your own ideas showing up below. The best website I found for the home workshop guy was Joe Weaver's 1964 Falcon Sprint restoration site, with some nice diagrams of recommended workshop layouts. They are intended for cars, but you can easily see how they'd work for motorcycles with a little fine-tuning. However, almost all his very good ideas had already been given to me by the experienced hands on the two listserves. Joe Weaver's site is at
<http://www.joesfalcon.com/workshop/workshop.html>.

Another site that is a lot of fun if you want to dream about what you could do if you had enough money to build the perfect workshop for your Jay Leno-like bike collection is the Ultimate Garage site at <http://www.ultimategarage.com/consult.html>. You too can hire the Ultimate Garage consultant to work with your architect, and don't forget to add that state-of-the-art security system, similar to what banks have. You don't want all your Ferraris to get stolen. More seriously, he indicates that some of his consulting jobs cost as low as \$1500, so he could be affordable for some of us regular types. He also provides some links to sites of suppliers of various goodies for your workshop. I liked Griot's Garage, which sells some great stuff online at <http://www.griotsgarage.com/index.jsp>. This stuff is expensive, but

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browsing through there and other similar sites gives you lots of good ideas for your own workshop. Here are a few others, many of which carry the same products:

<http://www.garageenhancements.com/>

<http://www.awesomegarage.com/>

<http://www.tugc.com/>

<http://www.thecompletegarage.com/>

This next site has an interesting feature, an online blueprint estimator that lets you design and plan the latest storage systems, play around with different features, and then get an estimate of how much it would cost: <http://www.gladitorgarageworks.com/>

Finally, for some interesting garage building plans, check out <http://www.nicks.ca/Uc.gar.html>. Now, onto motorcycle workshop planning.

Size Does Matter

You have to work within the space you have on your property, local building codes, and what you can afford, but those who sent me suggestions were clear about one thing—no matter how big you build it, you will somehow outgrow it. So don't start too small if you can possibly avoid it. Provided you don't have to share your space with the family car, bicycles, and lawn mowers, the smallest size is a one-car garage. Even then, however, it's useful to have a larger than normal one, so that you can have some small additional rooms for things like air compressors, furnaces, and solvent tanks (and don't put the furnace and solvent tank in the same room). Naturally, if you have a collection of motorcycles, a metal lathe, etc., then you will need more space. If your property is narrow and long, you can also make your one-car garage into a double length garage. I know many people have restored motorcycles in much smaller sheds. I'm not saying you can't do that. I'm just saying that a one-car garage is about the smallest size for a reasonably comfortable workshop with the sorts of features I will be describing below.

If you have limited space, it's especially important to pre-plan carefully. Even if you've got a two-storey, three-car garage for your workshop, you still want to make the most efficient use of it. Workbenches need to be the correct height for you. You need enough space to move around easily, especially if you are on the larger side. You will spend most of your time at the bike or at the workbench, so they and most of your tools should be close together. A typical set up would be to have the main workbench against one wall. Your tools would be beside it, or maybe on a pegboard above it, and your bike

stand directly in front of the workbench. If you don't have a motorcycle jack of some kind, it's easy to build a cheap platform and ramp out of 2x4's and plywood. When space is a problem, you can store the ramp outside the garage except when you need it.

There are many ways to make the most of your space. You can include a load bearing attic for parts storage with some easily accessible way of getting up there. A retractable staircase is ideal, although not cheap, and a ladder will work for smaller parts. You can also build an outdoor staircase and some means of entrance. An interesting approach is to have a gambrel roof (go to <http://www.nicks.ca/ucn.14045.html> for an example of this). You can even design your workshop so that you have a large-sized removable piece of ceiling (i.e. the floor of your attic), and some kind of winch and pulley system hanging from a load bearing beam that allows you to lift entire motorcycles up into the attic space for storage. Think carefully about where you would want to locate this, and then you can even use it if you ever have to pull out a car engine. It can also make removing motorcycle engines easier.

When space is at a premium, castors are a great way to give yourself the flexibility to move even heavy items around easily. In this way you can adjust your work space to different needs on different days. You can put workbenches on heavy castors and build yourself a sturdy trolley for under the centre stand of bikes. If you are buying a motorcycle lift for the workshop, look for one that comes with wheels. You can also make trolleys to go under stackable plastic boxes and use those for parts.

Even pegboard panels can be attached to wooden or metal legs and put on castor wheels, so your tools are easily movable, even for working outside on a nice summer day. Not enough wall space either you say. Then add some hinged, swing-out pegboard panels, or sliding panels, to it for even more efficient use of space.

Climate Control

The key to having a comfortable temperature in your workshop is excellent insulation to keep out heat and cold. If you live in the ideal temperate climate, this will not be so important. If you live in Canada, like me, or Arizona, you have to plan for temperature control. You will want full fiberglass batting insulation or a product of similar quality in all your walls and above the ceiling. Do not compress this insulation thinking that pushing more in is better. You will only reduce its

insulating capacity if you compress it. Provide a vapor barrier with stapled up heavy duty plastic before putting up your interior walls over the insulation. If you intend to use your attic area for storage, then your insulation will have to go in the roof. Special 4' x 8' sheet insulation can be purchased for this application. Good insulation will also keep the noise in and your neighbors happy when you crank it up to 5000 rpm setting the timing.

Buy insulated garage doors. You can also get insulation kits for uninsulated garage doors. Use good weather stripping around the doors, and if you have any doors that you don't need to use, consider putting some insulation over the inside of them and screwing plywood over top of that. You will also want double glazed, argon-filled windows. One of the Canadian contributors of ideas for this report gets by in the winter with a single, small electric space heater in a two-car garage because he has excellent insulation and seals up all cracks around doors etc. Even on -30 nights, he can work at a slightly cool but comfortable temperature.

There are many options for heating and cooling. You'll want to install heating and/or cooling systems that aren't likely to increase the fire hazard, given that your workshop is bound to have vapors occasionally from solvents or paints. Local firemen will usually provide all kinds of great, free advice on such things. Depending on where you live, a window air conditioner or an electric space heater may be all you need. In more extreme climates you probably want to have a more robust heating or cooling system. Shop around for these. Go to different places that specialize in heating and cooling systems and get them to show you the many different types of systems available. Electrical heating systems are usually the cheapest and easiest to install, especially in an existing building, but natural gas may be cheaper in the long run. Electric heaters burn a lot of electricity.

If you are building from scratch, you should seriously consider radiant floor heating. With this system, the concrete floor has water pipes laid right into it at the time the cement is poured. Then, your floor is heated via hot water, and the heat radiates up through the garage. This is becoming increasingly common in new construction in cold climates like Canada. People who have it swear by it, as does my brother, who is an architect. In a regular heating system, the concrete floor always stays cold, and decreases comfort levels when you are on that concrete for hours. With the radiant heat system, the floor is always warm. You'll be wanting to bring water in anyway for a sink, so it isn't a lot more work to lay the pipes for the radiant heat system.

You will then need a hot water heater rather than a furnace. Hot water heaters can be gas or electric. Electric is less likely to cause a fire, especially if you wire correctly (see electrical section below). However, gas-fired hot water heaters can be set up so that the combustion system is completely sealed, and vented outside. The same is true of gas-fired furnaces if you end up using one for heating.

If you do go with a gas-fired furnace and/or water heater, you might want to consider building a small utility room for it, so that it can be kept separate from any area that has solvents etc. The same room can be used as a storage space for parts and is a great place to put your noisy air compressor, and then plumb air lines into your workshop from the room.

Finally, consider installing a programmable thermostat and a system for humidity and, thereby, rust control. The specialty stores can advise you on these as well. If it's a detached garage, it's a nice convenience to have the thermostat installed in your house rather than the garage. Then when you need to crank the heat or the air conditioning up so that you can head out to the workshop after supper, you don't have to go out to the workshop to do that.

Electrical Considerations

Plan for 3 different circuits: one for lighting, one for regular outlets and electrical heating, and one for 220V outlets. Even if you don't use equipment now that requires 220V, there's a good chance you will at some point in the future.

You should only use grounded (3-prong) GFCI electrical outlets. The GFCI ones trip instantly if there is a current leak, and are excellent for preventing fires or explosions. In some areas, building codes now require them for all new construction. Talk to an electrician to get ideas about the best systems around, and, once again, the fire department can help with fire prevention advice. If there is any chance of small kids being in the workshop unsupervised, you might also consider a key-operated master switch for circuits with equipment like lathes, saws etc. This is also the time to wire in smoke detectors and have them linked to the smoke detectors in your house so that they all go off together. That way you get lots of early warning, because it's easy not to notice a fire that has started in your garage until it's already well advanced.

You will want at least 3 outlets per wall, and at least two 220V outlets, so you can keep extension cord use to a minimum. You also need to have extra outlets close to your workbench(es). One on either end of the workbench is a good set up. If you have any extra storage or utility rooms in the workshop, then each of those rooms should have an additional outlet and give some thought to whether you might ever need a 220V outlet in one of these rooms. It's also nice to have one pull-down plug-in mounted in the ceiling, maybe more if you can afford it or if it's a large workshop. If you aren't building from scratch, Joe Weaver recommends at his Falcon website "a device called *Plugmold* which is a strip about an inch or so wide and has outlets every so often and mounts on the surface of a wall or bench. It comes in many lengths from two feet to over 10 feet."

Pre-planning is essential for electrical needs as well. For example, you will want to think about locations of exhaust fans, whether you need to wire in heating or not, how much lighting you want and where, special outlets for a stove (you know, for heating that cylinder head), and any low voltage needs such as telephone lines, stereos, etc. You may also want independent switching for your lights (see below).

If you plan to paint in this space, then you will not be able to meet building code requirements without considerable expense. You will need special explosion proof exhaust fans and electrical systems. These aren't cheap, but it is easy to start a fire or an explosion with a single spark when you have a lot of paint fumes in your workshop. Solvent fumes are not nearly as volatile, and so you can get away with having a solvent tank. Even then, however, it's wise to spend the money on an explosion proof exhaust fan. Regular exhaust fans can spark fairly easily.

Lighting, Windows, and Paint (and Walls, Ceilings, Floors)

Lights

Anyone who has ever tried to work on a bike in poor lighting knows the importance of good lighting. Window selection and the right choice of paint can help. Fluorescent lighting will give you by far the best results, use less electricity, and the tubes last much longer than incandescent bulbs. For a one-car garage, you will need about 16 feet worth of the fluorescent shop light units. This really means 32 feet of lights, since each of those units hold two fluorescent lights. Since a typical one car garage is about 14 x 22 feet, you can assume that you will need a four foot fluorescent shop light for every 75 square feet of

space. Two four-foot plug-in shop lights are about half the price of an eight foot shop light, and are usually quieter with an A or B ballast rating. You can either wire in outlets in the ceiling for the four foot plug-in type or have an electrician hard wire them. The A ballast ratings are considered suitable for hospitals and churches, so are very quiet. The eight foot ones usually have B or C ratings and give off that humming noise you sometimes hear from fluorescent lights. Look for ones with at least a B rating, because those noisy street lamps have C ratings.

For a bit more money, you can order full spectrum fluorescent lighting. It is less harsh and glaring and more closely approximates sunlight. If you are one of those people who gets headaches from being around fluorescent lighting for long periods, then the full spectrum lights will likely cure that problem. They are also better for growing plants. Your fluorescent lights should have diffusing covers to prevent breakage. Everything you want to know and more about fluorescent lighting is at <http://www.thekrib.com/Lights/fluor-goldwasser.html>.

Fluorescent lights flash about 60 times per second. Therefore, if something like a lathe is turning at just the right rpm, 3600 in this instance, it can appear to be stopped or even turning backwards. You may have even noticed this riding your motorcycle at night when the spoke wheels and fluorescent street lights can create the same effect. You've probably seen on old westerns where wagon wheels appear to be going backwards. It's the same principle. As a safety note, you should have an additional plug-in halogen or incandescent light on a stand for use with equipment like lathes, grinders etc. Just move it around the shop as you need it. If you have good natural light from windows, this won't be an issue except at night.

Install lighting at the workbench so as to prevent shadows from your body when working on something. Consider having a four foot fluorescent light wall-mounted above the bench, or two four-foots if your bench is long enough. A movable desk lamp is also handy to have at the workbench. You can also buy pull-down, retractable trouble lights. They don't have to be incandescent kind anymore either. You can now get compact fluorescent trouble lights. You're more likely to want this right above the bike.

Depending on the size of your space, you can have independent switching for the lights, so you can control lighting in different parts. This is especially true for your workbench lights. It's not a bad idea to

have a couple of incandescent bulbs mounted in the ceiling on a separate switch for when you aren't actually working on anything, or just making a quick visit, especially in cold climates. Fluorescent lights don't fire up well at colder temperatures, so if you are keeping your workshop cool when not in use, you can switch on the incandescents for a quick visit to the garage, and they also come in handy when using lathes etc. as described above. It's also convenient to have on/off switches at all doorways.

Windows

Windows are great for natural light. If you live in an area where break-ins are common, you may have to forget this, or use bars over the windows or that special wired glass. Have some form of blinds or drapes for all the windows too, so you don't let covetous eyes see all your expensive tools and beautiful bikes. Skylights are great if you don't need to have an attic area for storage, and much more difficult for thieves to take advantage of. Keep in mind, however, that the more glass you have, the tougher it is to heat or cool the space. Moreover, every window uses up space for storage, shelving etc. It's a trade-off. Think about what suits you. If you ride on the weekends and most of your work is done in the evening when it's dark, then why have windows.

Paint (and Walls, Floors and Ceilings)

Paint the walls and ceiling with white paint, not off-white or egg shell, but true white. This too will greatly improve the lighting. Oil-based paints for the walls and ceiling are easier to keep clean, but since it's a workshop that's not a big concern. Latex paints are much easier to work with, and if a spot gets a bit dirty, just slap on a bit more paint. After all it's not your living room.

Of course this means your walls and ceilings have to be paintable, and that doesn't mean spray painting the plastic vapor barrier stapled up over your insulation. Walls don't have to be fancy. It can just be plywood to cover your insulation, or it can be drywalled like the walls of your house. If you want to pegboard everything, plywood underneath is probably all you need, but if you do go with just plywood, use a good quality with a fairly smooth surface for easier painting. Drywall (also called wallboard or sheetrock depending where you live) is much better for fire prevention. It slows the spread of fire, whereas plywood catches on fire fairly quickly. If it's an attached garage, you should definitely drywall the ceiling and the walls that adjoin the house with 5/8" drywall, which works as an effective fire

retardant. If a fire ever starts in the garage while you are sleeping, drywall can save lives. Building codes require this where I live.

Paint the floor a light color for the same reason, and because it makes it easier to clean up and find small dropped parts. Some people believe the floor should be painted white too, although others find that just too bright and too likely to show dirt. You can try a trick they use in airplane hangars. Paint most of the floor with something like a light gray, but directly under where you will work on the bike paint a rectangular white section a bit longer and wider than a bike. While the paint is still wet, sprinkle on some of the reflective glass beads they use on road signs.

A high quality industrial garage epoxy paint works best, because it resists oil and gas. Then add at least two coats of clearcoat. If you are using the reflective beads, you'd presumably spread them with the last coat of clearcoat. Check around, because some of these paints are made to provide non-slip surfaces as well. Be sure to precisely follow all the floor preparation instructions before painting, especially on old floors. It's a bit of a pain. It's much easier to do with a brand new floor. You can also get professionals to do it, and then you have a warranty if it starts peeling. Another flooring option that is easier to install is special tiling made by companies like RaceDeck. These are excellent floor systems, but they aren't cheap.

Workbenches

Apart from the bike itself, the central focus of a workshop is the workbench. Make it the right height for you, rather than following some standard size. Generally speaking, you will want the work surface to be 2 or 3 inches lower than the height of your elbows. If anything err on the side of making it too high, because you can always cut an inch or two off the legs. If it's too short, making it higher is difficult without losing stability. It needs to be sturdy. It's okay to build one with 2x4s, plywood, and 4x4s for the legs, but use 3/4" plywood for the work surface and screws rather than nails. You can reinforce it by using cross braces and buying some of the metal plates that are used for framing, deck supports, and the like. Allow yourself a minimum of 4 feet of working space in front of the bench, between it and the bike. Six feet is better.

If you don't have a lot of shelving, cabinets, or pegboard above your main workbench it can be up to 36 inches wide. Just remember that if you have to reach across a wide space to get to those shelves etc., then you can't build them very high. If you want to have lots of

storage above your workbench, it's probably best to limit it to 24 inches in width unless you are tall with a long reach. Once again, design it to suit you. Try to build it at least ten feet long if you have the space. Some shelving below it is nice, but remember to leave an area that you can easily pull your chair or stool under so you can sit while working. Consider incorporating a section that is height adjustable so that you can lower it and have a comfortable height for working on larger items, like an engine out of the frame. Finally, at one end cover the work surface with a 2x3 ft section of 1/4 inch steel plate for heavy work. This is also the place to attach your vise.

Some people like to have cabinets or shelving above the workbench, but if you have just one bench, remember that these cabinets can get in the way of table top tools and larger items like engines. They also make it difficult to have a wall mounted fluorescent light or a workbench pegboard for your tools. It's a matter of personal preference.

You will need a stool. Stools can be uncomfortable if they are made poorly. The height of the stool needs to be correct for the height of the bench, and it should have back support and a cushioned seat. The stool should have cross braces you can use as foot rests, and these should be high enough that your legs don't dangle. It also needs a wide base to prevent tipping. Buy a stool with heavy duty caster wheels, or mount those afterwards.

If you have the space, build two workbenches. One for dirty work. This is where you'd have your bench grinder, vise etc. If you have one of these don't put cabinets above it, since they can get in the way of such tools. The other one would be for clean work on engines, carbs, etc. In fact, if you have lots and lots of space, consider a sturdy table as well, so that you can easily get at a project from all sides while sitting in a comfortable chair.

Workbenches and similar surfaces are much easier to keep clean if covered in some kind of laminate. You will want good lighting installed, with electrical outlets and air compressor connections all nearby (all of which are discussed in greater detail in other sections). It's also a good idea to have some adjustable halogen or incandescent desklamp type lighting handy, so you can swing it above projects if needed.

Standing on concrete for long periods is not fun, so you can also consider buying "kitchen matting" from a restaurant supply store. This is the stuff that chefs, dishwashers, etc. lay down on restaurant

kitchen floors to save their feet and backs when they work for hours on their feet. It comes in squares of different sizes and can just be picked up and taken outside for cleaning with a garden hose. However, you won't be able to wheel your stool or chair around on this stuff, so think about what works best for you. The Griot's Garage site mentioned at the start has a similar product. For the same reasons, those in the restaurant trade almost always work in the same kind of cushioned shoes that long distance runners use, so a good pair of shoes like this in your workshop instead of kitchen matting still lets you have the chair on wheels. You might also put some cheap carpeting down in front of your bench.

Storage: You Can't Have Enough

When I was looking for information, people kept saying things like: "You can't get enough storage." Or: "Storage, there's no such as too much." I've already touched on some storage issues in the section on size. For example, it was there that the ideas of creating a garage attic space for storage was raised or having some small extra rooms for storing parts. In the section on workbenches, I touched on cabinetry. Now I'll turn to some other ways of improving storage.

First of all, pegboard is your friend. It is cheap, flexible, efficient and excellent for hanging up tools and supplies near your work bench. It can be found at any home improvement store. **Use a glue gun to put a dab of glue on the hooks to help them stay in the pegboard holes.**

Pegboard is like storage. You can't have enough, especially around workbenches. Even if you don't use a section of it regularly, it's nice to have it when you need it. Paint it the same white color as the walls to help with lighting. Some guys cover their entire wall surfaces with pegboard, just so it's there if they ever need it. There are many newer, wall systems available now that improve on the old pegboard. They are also more expensive, but check out the garage sites mentioned earlier and see if there's anything you like. If you can afford them, go for it. Awesome Garage, which has some of these, expects to have online sales available about the end of February 2003.

Shelving is your other storage friend. It's also cheap. You can buy ready made stuff, build your own with 2x4s and plywood, or find all kinds of discarded shelving units at garage sales, yard sales, surplus asset stores and the like. Build shelving into your workbenches with care. It's like a desk, you need an open space for your chair, but you also need some storage on each end.

You will want lots of shelving organized in the way that seems best for your space. Think carefully about where you put it. Once installed, it can be a hassle to move it. Whether it's cheap or expensive, free-standing or hung from a wall, it's a good idea to paint the shelving (in a light color of course) so that clean up is easier. You will want some large, deep shelves for larger parts and smaller shelves for cans, containers etc. You may also want a "dirty" shelving area for parts yet to be cleaned, old parts in storage etc. If you have a dirty shelving area, you also need a "clean" area for those just cleaned parts, especially from things like engines and carbs.

You should also have at least one locking cabinet somewhere with shelving. This is a good place to put things that kids must not get at because they are poisonous, flammable etc. It's also a good place to store parts that have to be handled with care, e.g. connecting rods. (Just imagine your wife coming in and moving those connecting rods laying on the bench by giving them a toss into a pile of old metal parts so she can make room to paint something.) For this reason, one of the shelves in the cabinet can have a piece of old carpet or something similar glued on to further protect such parts, especially if the shelves are metal instead of wood.

You'll also want a bookshelf for workshop manuals, parts books, catalogues from parts suppliers, bike magazines, and your assortment of literature on bikes, restoration, repair, and workshop technique. A bulletin board somewhere near the workbench is handy. You will always find a use for some of those large hooks people usually hang bicycles from. Then there are all the little things like a big container for shop rags, a paper towel dispenser (near the sink), and lots of boxes for parts storage. I prefer plastic or rubber ones, but lots of people get by just fine with cardboard boxes. The best ones are the ones that you buy paper in. They are a nice size, have lids, and stack easily. Whatever the type of box, stackability is important if you have limited space. Finally, if space is really tight, don't forget that you can hang shelving from your ceiling rafters. Just be sure to build them strong and don't load too much weight on them. Some of the sites mentioned at the beginning sell special shelving for this purpose that will hold up to 500 lbs.

Other Necessities

What you have to have and what would be nice to have are all a matter of personal choice. This represents my personal views on what else you have to have. This will be different for everyone.

First, you need one or two of those small utility rooms I've spoken of earlier. Ideally, you can have a slightly longer than normal garage, and then put two such room beside one another at one end of the garage. One of them can have your furnace, hot water heater, air compressor etc. The other can be for the stuff that smells or is a bit volatile. Here, for example, would be your solvent tank and an explosion proof exhaust fan. Dirty rags can also be kept in here in a fire proof container of some sort. I know some argue that you should have your solvent tank in a separate garden shed, but Canadian winters are too cold to make that feasible. Solvent tanks are quite safe indoors if they are set up correctly. This is also where you would store any of the more volatile liquids, but don't keep anything really explosive, like gasoline, in your workshop.

Now that the air compressor is an a utility room, where you won't notice its noise so much, you will need to plumb in some "black" steel pipe from your utility room so that you can have several outlets for your air compressor. You will definitely want one or two near your workbenches. Even give some thought to a pull-down, retractable one above the bike. Get the plumber to do plumb it all in while he is there doing your water lines. You can then attach quick disconnects to each of the pipe outlets. Don't use PCV pipe, which can burst and cause an accident.

You will also want an exhaust fan in the main workshop area that is at least 6" in diameter. This one doesn't have to be explosion proof if you are not going to be working with explosive liquids in this area, but they are good to have for the less explosive stuff like aerosol cans, oil, charging batteries, and the smells from the same. A No Smoking sign or two aren't a bad idea either (unless of course you're a smoker).

You definitely want a large industrial sink with hot and cold water plumbed in. You can buy the type that sit on their own legs, so you don't have to worry about building a cabinet for it. You should have a fire extinguisher, maybe two, and get advice again from the fire department about the best type to have. You don't need a full first-aid kit if there's one in your house, but it's a good idea to have some clean bandages and gauze handy. (I know from experience that it's nice to have after you slice your thumb on a sharp piece of metal and need something to wrap it in while driving to the local medical clinic to get stitches. It prevents blood stains on the car seat.)

It's Nice to Have

A nice feature is to have a plumbed-in drain in your floor for old oil. At oil change time just park the bike above it and let the oil flow out of the bike and down the drain. You will need a hole dug outside the garage deep enough for a gravity feed to a container to catch the oil. When the container fills, just open the little cabinet you've built in the hole, pull out the container, and take it to the recycling depot.

Install baseboards around the walls. This isn't for cosmetic effect. They help to keep out mice and insects. You can just use cheap quarter round baseboards. A bead of caulk along the top and bottom of the baseboard makes the space more insect-free and also helps to keep out drafts.

If you are building from scratch and you have some valuable bikes, then put some hardened steel U-Bolts into the floor that you can chain your bikes to.

Pick up a small used stove somewhere. They are great when you need to heat an engine part, have a pot of tea, or even make a can of soup. An old fridge is handy for similar reasons, especially for the shop beer supply. If you've got enough space, it doesn't hurt to plumb in a toilet near the sink. You can even stick it inside one of your utility rooms for a bit of added privacy for visitors.