BASIC ARCHITECTURAL MODEL MAKING FOR STUDENTS.
By Keith Day of Model Builders Supply

The following information can be quite useful in the following fields: Model Making * Model Railroad building * Dollhouse building * Special Effects * School Projects and more…

Scale models are still the most effective and instant way of completely communicating a concept, in spite of the advances in computerization.

Building a scale model for a student project requires that the student understand the full three dimensional spatial arrangement and implications of the scheme, because all surfaces and planes must be fully explained and integrated with one another to form a cohesive entity.

You cannot just leave indeterminate lines as on a drawing or omit a view, the resolution of which you are unsure, when you are constructing a model from that set of drawings. That is, in fact, why many very fast, crude study models are made in architects' offices-to clarify and prove unusual, complicated or otherwise uncertain interfaces and spatial arrangements. Or, in other cases, when the designer has the complete mental image, a quick scale model mock up is the best way to convey that to owners or other involved people.

Modeling, in addition to allowing you to fully convey the concept to the viewer, also teaches the student to properly comprehend the three dimensional totality in its esthetic and functional aspect. You have to figure out how it will all work in order to build a scale model.

Until quite recently in engineering process design, it was almost unheard of not to construct a physical three-dimensional model of any consequential project. These models are built as an integral part of the design process right in the design office. With perhaps twelve or more disciplines, each concentrating on their aspect of the project, the model naturally becomes the focal meeting and proving point for the design of all disciplines, within the constraints of priority for space, accessibility and function. In this context, the esthetics are a minimal consideration but accuracy is paramount.

These points are made in full awareness of the big strides made in computer aided design. Such advocates will say that the physical three-dimensional model is now obsolete.
The reality is that any form of computer design is depicted in a series of two-dimensional images on a screen or sheet. It is nowhere near as effective a means of communicating concepts as the physical model, nor can it compete on the basis of speed and cost for many projects.
This has been proved many times where companies have moved to the "leading edge" with CAD, then later reverted to physical models when they found that the computer is not all things for everything in designing and certainly not in communicating that design completely, as well as efficiently and cost effectively. The most intelligent, preferred approach is a combination of both methods.

In architecture, the considerations are much more concerned with form and esthetics, as well as function. Therefore, in many aspects of architectural model making, surface texture and colour also play an important role.

Many students are plunged into the requirement of building a model as part of their curriculum and they have no idea how to proceed.
As a result, very often it is something that is left to the last few days before the project is due.
This then results in frantic calls to fellow students and rushing around to come up with materials and ways to build the required model.
The fearful reality starts to dawn. "This thing is a lot more involved than I realized!" "My drawings are not complete enough to build the model."
Surprisingly, many students at high school and college level do not have any clear idea of the scale they should be using to properly portray the particular type of scheme, much less, how to build the model.

This manual is intended to put the students on a course that is simplified for the purpose of being able to permit them to achieve an acceptable result, using materials and techniques which do not require special machines, or sophisticated tools.
At the same time, these standard principles will be of much more use "in the real world" than much of the prehistoric "guidance" still offered by some teachers, to use foam cork or balsa wood either in ignorance or by misinformed personal choice. At Model Builders Supply we offer a wide range of model supplies for exterior or interior layout models, whether it be highly detailed or just a basic mock up.

Your first consideration is the design and drawings.
In projects such as these being discussed, it is preferable that plans, elevations and sections be drawn at the same scale as the intended model. It is not mandatory, but it makes understanding and model interpretation easier. Most professional model makers will prepare several drawings of the building at actual model size. They will draw the plans and sections using the actual thickness of material they are intending to use, as well as how they will butt together in corners or at floor joints. To the novice model maker, this may seem like a lot of wasted effort and ask himself "why not just get on and build it making adjustments as you go".
When the professional sits down and commences to make model drawings, she/he is actually mentally designing the whole process of how the model will be constructed; no guesswork. Then, the building operation flows through much more smoothly and any difficulties are identified before they become problems.
To the time-pressed and neophyte student model maker (not forgetting cost conscious, if not impecunious), this process will seem like a lot of unnecessary effort.
The point was illustrated so that the student will be better able to make the decision on how best to plan her/his project.
If there is any consequential site work involved, this may well be drawn at a smaller scale than the model.

What scale?
Your project may well have pre-determined this question, but the following are the most commonly used scales for particular types of projects.
As there is no universal unanimity on the use between imperial or metric measurement we will quote both, using the closest comparisons. An example would be 1:50 or ¼" = 1foot (which is of course 1:48). While you will build specifically to one or the other in terms of building dimensions, there are many pre-manufactured materials, supplies and accessories such as those manufactured by MBS (Model Builders Supply) that you may employ for your model, where the difference in scale is so small that there is no distinction made. Examples would be brick, roofing, people, vehicles, furniture and accessories.

It is very common for students embarking on their first model, to over visualize the correct size for brick, roof shingles, windows etc.
It is important that you do use the proper scale items because they are significant to the viewers' correct comprehension for the scale of the project. That is often why figures and cars are put on models, to reinforce the scale relationship, as well as focus on entrances, activity areas and traffic patterns.

RESIDENTIAL SINGLE FAMILY BUILDINGS.

The most widely used scale is 1:50 / ¼" = 1foot because it is large enough to portray the detail aspects without the entire mass becoming overwhelming and physically unmanageable. While architecture is an expression of individuality, there are nonetheless many standard items, both in reality and for the model, which the designer will utilize and integrate into the project. In model making there are probably more standard items at this scale than any other.
If your project of a house was to include any extent of site detailing for the garden, terraces, patios, gazebos, entrances or landscaping in general, it may be that the overall extent could dictate that you drop the scale to 1:100 / 1/8" = 1foot in order to keep the base size manageable. 600x900mm / 2ftx3ft is about as big as you would want a base size, in order to literally move it around without undue difficulty.
There are also many "off the shelf" items for this scale, but probably not as many internal items, if that was a consideration. 1:25 / ½" = 1foot is also widely used, but this mainly where specific detailing, texture, particularly for interiors, is paramount.
In professional use, for display and public presentation this scale is more prevalent. The other area where this scale is popular, is for interiors. Interior Design students frequently utilize this scale as it offers enough size to convey texture as well as form, without getting too large.

Where interiors are the specific focus, and style as well as texture and spatial arrangement are important, the student may choose to go to 1" = 1foot which is the universal scale for Dollhouses and Miniaturists. Just about anything is available, from building materials, windows, doors, lighting, furniture, wallpapers, carpets and just about every accessory imaginable.

The obvious drawback here is cost, as with all model scales, the larger the item gets, the more it costs and at this scale the size, materials and consequent detailing means that it is very easy to run up a cost of hundreds of dollars without realizing it.
The actual work is quicker and easier, as you are mainly arranging items to your chosen design. The effect will no doubt look very impressive, but it will cost.

COMMERCIAL / INDUSTRIAL BUILDINGS.
Scales of these are usually somewhat smaller than for house models, mainly because the structures involved are usually much more extensive in plan, sitting and general mass. There are of course, exceptions, such as when a developer wants a model to have a significant marketing impact by having a large impressive display.

It is rare for models in this category to be larger than 1:100 / 1/8" = 1foot.

LANDSCAPE ARCHITECTURE MODELS.
Often landscaping design is included in an overall model. However, landscape architecture being an identifiable discipline itself, will frequently require the designer to construct a specific model.
The scales can be quite varied. For a median residential project it is quite likely that 1" = 1foot may be used. Or, as the overall size expands it can drop to any scale to perhaps 1:200 / 1/16" = 1foot.
In projects such as golf courses, the scales become similar to those in the major development category above.
Companies such as MODEL BUILDERS SUPPLY manufacture an extremely wide range of trees, bushes, shrubs, ground cover, grasses, blossoms, vines, water textures and colours as well as having many street and outdoor furniture accessories that cover all the scale options.

The most popular scales are 1:200 / 1/16" = 1foot and 1:500 / 1/32" = 1foot for projects where there are multiple buildings and the siting is dominant.

In the imperial scales (fractional), there are several intermediate scale options and where small scale site models are concerned, there are a range of scales expressed differently. These are generally known as

engineering scales and are stated as 1” = 20ft, 1” = 50ft, etc. whereas the architectural fractional scales are expressed as 1/8” = 1ft or 3/32” = 1ft, etc. The following chart lists most scales used and their various closely matching equivalents, as well as products available from MBS.

SCALE	RATIO	USE COMMENTS	FINISHED MATERIALS AVAILABLE
1" = 100ft.	1:1200	Overall development sites.	Cars, trees, houses, base materials.
1:1000	1:1000	Overall development sites.	Cars, trees, houses, base mtrls, airliners.
1" = 80ft.	1:960	Overall development sites.	Cars, trees, houses, base materials.
1" = 60ft.	1:720	Housing, commercial development sites.	Cars, landscape, base materials, houses.
1:500	1:500	Housing, commercial development sites.	Vehicles, l'scape materials, houses, people.
1" = 50ft.	1:600	Housing, commercial development sites.	Cars, l'scape, base mtrls, houses, airliners.
1" = 40ft.	1:480	Housing, commercial development sites.	Cars, house, boats, l'scpe mt'ls, st. furn, figs.
1:400	1:400	Multiple housing, commercial developments.	As above.
1/32" = 1ft.	1:384	Multiple housing, commercial developments.	As above.
1:300	1:300	Multiple housing, commercial developments.	Few specific items.
1" = 20ft.	1:240	Commercial and industrial projects.	Vehicles, boats, figs, airliners, st. furn, L'scpe.
1:250	1:250	Commercial and industrial projects.	As above plus fences & specific items.
1:200	1:200	Commercial and industrial projects.	As above. Popular scale.
1/16" = 1ft.	1:192	Commercial and industrial projects.	As above.
1:150	1:150	Commercial and industrial projects.	Cars, figures. Not a popular scale.
3/32 = 1ft.	1:144	Commercial and industrial projects.	As above.
1" = 10ft.	1:120	Houses, commercial & industrial projects.	As above.
1:100	1:100	Houses, commercial & industrial projects.	Popular scale, most items avail. + interiors.
1/8" = 1ft.	1:96	Houses, commercial & industrial projects.	As above.
1:75	1:75	Rarely used.	No specifics.
1:50	1:50	Houses, interiors, small comm & ind projects.	Popular scale, best avail. + interior items.
1/4" = 1ft.	1:48	Houses, interiors, small comm & ind projects.	As above.
3/8" = 1ft.	1:32	Primarily for engineering process modelling.	Everything for engineering models.
1:25	1:25	Engineering, interiors, sets, sections.	Wide range of all items. Popular scale.
1/2" = 1ft.	1:24	Engineering, interiors, sets, sections.	As above.
1:20	1:20	Interiors, study sections.	Some figures, no other specifics.
1" = 1ft.	1:12	Dollhouse/Miniaturist, study sections.	Everything except major trees.
1:12	1:12	Dollhouse/Miniaturist, study sections.	As above.

For projects that mainly involve the modeling of a building other than a shopping mall or a large industrial complex, the most likely scale would be 1:200 / 1/16” = 1ft, again recognizing the need for portability, while maintaining sufficient size to reasonably portray the fundamental design.

If the project entails designing a complex of some acreage, then the scale will be reduced to retain the portability, while showing the significant elements for the spatial relationship of the buildings, traffic and pedestrian access and flow.
This could mean any scale from perhaps 1:500, down to 1” = 100ft (1:1200).

INTERIORS / THEATRICAL SETTINGS / SECTIONAL STUDIES.
These models are focusing on a series of detail elements within a larger structure, about which we are not concerned.
As we are dealing with wall coverings, floors, furniture, plants and specialty interior design items composed into a design entity, it demands a size large enough to clearly get the message across. There are many pre-manufactured components at 1:25 / ½” = 1ft, which is probably the most widely used scale for these functions.

As previously noted, 1:12 / 1" = 1ft is dollhouse scale and there is far more selection for interiors than any other scale. Depending on the requirement and use for the design model, it may be that the availability of such a range of parts will dictate the employment of this scale, despite the cost.

It is quite common for courses in building construction, to build models of specific sections for a structure, say a wall, from footings to a roof with part of a truss. The purpose of these models is for the student to correctly model the proper building details, sizes and how they interface.
Scales for such models will be from 1:25 / ½" = 1ft upwards. 1:12 is not uncommon, also 1:20, 1 1/2" = 1ft and occasionally 3" = 1ft.

When reviewing what has been stated so far, it is probably apparent that the larger the scale, the higher the cost of basic and supplementary materials. What the student should definitely not do, is use a scale that is smaller than that which is most suitable, in order to save materials expense. Better to maintain the preferred scale and tailor the budget to suit.

MATERIALS:

I am going to preface this by saying that generally, the objective for students' model building, is not so much to train them as model makers (although some will choose to follow that profession) as to teach them three dimensional thinking and comprehension and provide them with knowledge of another tool with which to develop and portray their design concepts.
The point of this is, that I do not believe students have the time necessary to put into a model, in the best of circumstances, so they should not be burdened with time consuming and usually irrelevant project criteria that forces them to hunt out and use materials that are unnecessarily time consuming and of no future help.
I will therefore confine most materials reviewed, to those that fulfill the following criteria:

EASILY OBTAINABLE
REASONABLE COST
FAST IN USE
DO NOT REQUIRE SPECIAL MACHINERY OR TOOLS
WILL YIELD A GOOD LOOKING PRESENTATION
IS APPLICABLE FOR USE "IN THE REAL WORLD"

On the subject of cost for model materials, there is no clear cut answer as we are addressing high school, college and university levels in a variety of disciplines along with people's ability and desire to spend anything from the most basic to the exotic.
I have seen high school students spend $1000 just on materials (usually funded by well-to-do parents) and others who have to make do with maybe $20 - $30 for a similar project.
Many student projects do not require lots of detail. It may be that you can convey your concept in a quite economical way. Later, you will see a variety of options.

One aspect that you should weigh is, time versus expense.
If time was of no consideration and you had the patience and aptitude, presumably you could produce an excellent result at minimal cost. That combination of circumstances rarely, if ever exists, therefore it becomes a trade off between what you can afford in time and the cost of pre-made components.
Your teacher or professor will be assessing the quality of your entire body of work for the project and should recognize your diligence and ability regardless of whether you spent $30 or $300 to construct the model. $300 spent on materials badly put together in a poor design, will not get better marks than a well made model of a thoughtful design on which the student spent $30.
Having said that, we all know that some glitter and sizzle for almost anything, receives more attention than the ordinary. You figure what is the best balance for your budget and marks balance.

Initially we will identify the materials, then go on to describe how and when to use them.

HI-IMPACT POLYSTYRENE -The number one material used for a wide range of model making applications is. This is usually available in solid white of all needed thicknesses, although MBS does have several other colours in .5mm thickness.

ACRYLICS - (frequently referred to as Plexiglas) are also extensively used in architectural model making. The two main reasons, are the availability of a wide range of transparent tints suitable for architecture, in thicknesses of 1.5mm .8mm and .5, and the fact that acrylics are very stable and score readily on the surface. MODEL BUILDERS SUPPLY stocks a good range of the very thin cast acrylics in many colours.

BASSWOOD - This is a fine grained wood that is available in a wide range of sticks, sheets and blocks. It is somewhat harder than balsa wood but is still quite readily cut with a craft knife for most thicknesses and does not collapse and crush like balsa. It paints very well and gives a far superior appearance to balsa.

OPEN CELL FOAM - This material is the same as that used for insulation and comes in thicknesses of 1, 2, 3 and 4". It is light blue or pink and is readily cut with a fine saw or a knife. If you have the availability of a hot wire cutter, that is fast and clean when using the material for block buildings. Mostly this foam is used on bases, to create contouring.

For the purpose of this basic instruction, I will not digress into other materials except to state that many specially textured styrene sheets of brick, stone, siding, roofing, etc. and mirrored styrene sheets are available from MBS, and can be used to enhance a model, using the same techniques as the standard stock materials.

Plastics are used so extensively because they are easier, faster and cleaner than wood card or metal. Also, excellent paint finishes are so quickly achieved, usually without primer or painstaking sanding and filling.
Polystyrene and acrylics bond readily to each other cleanly and without residue in a few seconds, by the application of solvent cement such as MBS's Solvent Cement (APSC-1) applied with a brush, syringe or squeeze bottle applicator. Edges must touch each other, so that the solvent will run through the joint by capillary action. The joint is almost immediately fused together and any excess residue will normally evaporate before it affects the other surfaces.

For bonding surface to surface, plastic or otherwise, there are several options. Contact cement can be used, but if synthetic cement is used (as opposed to latex based), care must be taken on thinner sheets of plastic, to ensure only a very light coating is applied and allowed to completely dry before bonding, or the plastic will buckle after a while. Other clean, safe and fast methods for surface to surface situations are transfer or double sided tapes. MODEL BUILDERS SUPPLY has special purpose made sheets of permanent two sided adhesive called STICK'M, which permit you to create your own "peel'n stick" application. Very easy, clean, fast, inexpensive.

To bond MBS's deeply configured patterned sheets, MODEL BUILDERS SUPPLY has a special, purpose made mastic glue called GLOOP that gives a solid bond to deeply embossed sheets to most substrates, such as plastic, wood, cardboard, styrene, acrylic, in fact most materials other than polyolefin's and silicone rubbers. This adhesive, unlike many others, will not attack or break down the surface plastic.

BASES, LANDCAPING AND SCENIC EFFECTS:
PRINCIPALLY FOR ARCHITECTURAL MODELLING.

In scale modeling of dioramas, model railroad layouts, architectural models, gaming boards and even dollhouse miniatures, the way scenery and landscaping is done can "make or break" the whole finished effect.

The type of model, or its' use, often dictate quite varied approaches. For example, an architectural model for institutional, commercial or industrial projects will usually not dwell unduly on landscaping features, but

rather focus more on the building design, with some focus on entrances, access routes or other aspects specific to the function of the building or complex.

This often entails simplified or stylized forms of trees, shrubbery and planting. Sometimes cork, wood or foam balls will be used for trees and bushes. Other times you will see just sticks or bare tree frames. Also, dried weeds such as yarrow are used. Generally, these treatments are confined to the smaller scales (1:200 and less).

On stylized models, the surface treatment is often left unpainted except perhaps for the paved areas. This means the landform will have been made from cork or a natural coloured cardboard, probably in stepped layers representing the topography. For smaller scale models, it is usual to paint grass areas with a technique of two or three colour series of uniform "oversprays". Some situations will allow the use of appropriately coloured craft sheets. In this situation the best way to apply is by using MBS STICK'M sheets covering the whole surface to avoid buckling. It is cheap, fast, clean and permanent.

Residential buildings and complexes on the other hand, invariably place a significant emphasis on the landscaping and environmental conditions around the site. This is especially true if the model is to serve as a promotional and marketing tool for selling, leasing, renting or financing.

This type of model is frequently built to larger scales (1:100, 1:50 etc.). Grass on models at these scales will usually be one of MBS's many grades and colour blends.

As you will read when you look in the landscape materials section, most Model Builders Supply scenic material and architectural tree heads have a unique feature not known in any other manufacture of such materials: They are made from a totally permanent flexible plastic composition that will always remain soft and flexible, will never dry out, crumble or lose its colour.

This attribute is particularly significant if the model has to last any length of time, such as for museum models, railroad layouts, dioramas, sales display models, or any model that will be subject to hot tropical weather, or on display in a store window, or under continuous spotlights.

Realistic detail is almost always the case for house models, dioramas, miniatures, model railroad layouts and similar hobby projects. The modeler strives to achieve the most natural appearance.

There are as many techniques as there are people applying them, so we will just advise you on a number of tips and methods that are in general use, then you can adapt and apply them to your particular project for the effect you want to achieve.

BASE BUILDING

These notes are intended to give guidance on ways and means for adding scenic and landscape details to topographical landform bases rather than how to build such bases, however, we will digress a little to briefly cover several methods for creating the basic landform.

Flat sites need no explanation. If berms are to be added, on flat sites or otherwise, the easiest way is to shape the berm from hi-density open cell foam, feathering the bottom edge to meet the flat base. Glue down with Weldbond then wipe a smear of Spackle around the perimeter.

Contouring on many architectural sites is frequently largely graded, therefore often the planes are straight slopes tying in to existing grades. This invariably means that a base winds up to be a combination of planes intersecting along reasonably straight lines to other levels. Stated simply, the way such model bases are usually constructed is to start with a flat plywood or chipboard plate that is established as roughly the lowest level that is within the site. This becomes the datum level. Then a series of vertical profile strips is set on

the plate in the form of an egg crate. As the top edge of each profile is the surface elevation, the egg crate can then be covered with a “skin”, usually a number a pieces, to give the correct grade levels.

Another way to get the same kind of result, is to carve the grades from block styrofoam, first mounted on a base plate. This is more often used when there is a lot of compound grades, bumps, berms, hills, etc. The surface has to be skimmed over with a paste to give a uniform finish and fill in any cracks. Spackle or thinned Durina are preferred choices. When dried, the surface has to be sanded, at least in some areas, before the grass or other finishes are applied.

In many cases, roads, parking lots, paved areas that are flat in the cross direction, are best defined by making all such surfaces cut out from a sheet of 1.5mm (.060”) hi-impact styrene, creating a network, that is fastened to the vertical egg crate profiles, then the remaining open voids between are filled in by one of the previous methods. If the road network plays a dominant part of the site, it is quite common to first develop the base perimeter profiles, then build profiles to establish the correct grades for the road network and make profiles for the remaining areas as needed to set the correct grades.

On any site that has a building tied in to varying grades, it is most desirable to build a plan “footprint” platform at the lowest level. This assumes that the structure will stand vertically. Fitting the land surface around the building is a process that must be done with care and precision, otherwise gaps will look unsightly. Sometimes foundation planting can hide gaps, or where applicable, sidewalks that are added after the building is in place.

Many architectural models transpire to be a combination of several of these techniques.

On model railroads and similar hobby modeling there is usually much more rugged, rocky outcrop, mountainous terrain to be dealt with.

The most widely used technique for this type of topography is basically the egg crate principle, using masonite for the profiles, then covering the surface with a wire netting which is then covered with a skin of some setting type material.

There are many versions and individual preferences for this phase of the operation. Plaster is a common favorite, usually soaked into newspaper, cheesecloth, or medical cast bandages. This is quite a messy process, but plaster lends itself very well to carving into realistic rocky formations and also colours well.

Another surfacing material is paper mache, it is simple to apply and not so messy. You do, however usually have to add plaster where you want rock outcrops.

A further material that gives significant strength and is easy to mix and apply is Durina plasticized instant paper mache (basically a pre-made paper mache). It has a natural earthy colour and has a long enough setting time to allow molding and modeling of surface conditions, including rocks. It paints easily, can be drilled, sawed, sanded or filed.

As a general rule, pre-paint your base surface with a colour approximately that of the proposed finish. We will assume that you intend to create a grass area, a planter, or scrubby grass in amongst rock outcrop.

LANDSCAPING AND SCENIC EFFECTS

Using a thick flat alkyd or latex based paint, repaint over the previously primed surfaces with a generous coating. Using a flour sieve, salt shaker, or tea strainer, sprinkle an MBS grass mixture thickly over the paint. If you want to have a regular lawn like finish, you will maintain the one chosen colour over the whole area. If you want to have an unkempt natural variegated surface, you will apply in an appropriately irregular manner, then switch colours. You must remember not to cover the paint on areas you want a different colour. Normally this will result in a gradual blended variation. If you want a sharp definition line between

colours or textures such as you would find on a golf course, it is better to do it in separate operations following one another.

Another method is to pre-paint a base colour then apply a spray adhesive and sprinkle as previously described. It is possible to continue additional texture blending by spraying over any desired parts, either to cover thin areas or to change the appearance.

By sprinkling fine sand or gravel in thinning and varying patches first, then covering the whole surface with a grass texture or a ground cover, a rough ground effect will be achieved.

In all the above procedures, when the paint is dry, the excess material should be lightly brushed off, or if possible, tip the model over and pat it to shake off the excess. These methods will enable you to recover the excess. The other way is to lightly vacuum the surface.

When setting rocks in place, the usual objective is to avoid them looking as though they are sitting on top of the ground. If you generously use a thick glue such as GLOOP, Silicone or Weldbond, you can put the rocks in the chosen fashion, and then sprinkle a suitable mixture over the excess exposed glue to blend with the surrounding area.

Ground covers by MODEL BUILDERS SUPPLY come in a variety of sizes and textures as well as in many colours. (LFS-1 series are the largest, then progressively smaller clumping textures down to the number 4 grade which is really just like coarse grass.)

The chosen ground cover would be set on the surface either in its wild state or in a designed setting as low shrubbery or bushes.

When in designed settings, the limits are usually well defined and the base colour may or may not be visible. If it will be, then it should be pre-painted and a transparent glue such as Weldbond should be used, or mix your base paint with the Weldbond before applying.

Another adhesive we like to use is panel adhesive, it is really thick and sticky and is usually a light tan colour which looks fine for dry earth, if any remains visible. The only potential drawback is that it comes in a cartridge that you use with a caulking gun.

When such ground cover is used in its wild state, either fine sand, grass texture or a combination can be sprinkled over once all the ground cover is in place. This covers any exposed glue and gives the ground cover/shrubbery that natural grown in look.

Trees are a significant element of landscaping, environmental and site development. On a model, they add realism and scale if well done. On the other hand, if they are just lumps on a stick, looking like toffee apples, they can ruin the whole appearance of the model.

Most trees can be used for a variety of scales, they will just represent different heights, i.e. a tree that is 30ft/25m high at a small scale, say 1:500 would be used as a bush or tubbed plant at 1:100 or 1:50 scale.

One thing that should be considered, is the size of the foliage texture, if you are building your own trees, either from scratch by making the armature (bare tree) from twisted wire like MBS multi stranded TAW-1 or 2, or by using Model Builders Supply molded 3-dimensional bare trees (TA's) at the appropriate size (there are 5 heights available).

When using the molded armatures, it is usual to twist the branches from the originally molded shape to a more irregular configuration. In doing this you must be careful not to rip off the branches. By warming the

tree in hot water or with a heat gun (on low), or a hair dryer (on high) you will minimize the chance of snapping off branches.

You can easily create different species such as pines, by clipping off a number of the branches, just leaving short stubs sticking out from the trunk. When you apply MBS foliage with GLOOP to the remaining odd branches you can get great looking Jack pines or Scots pines. For HO model railroaders the TA-8 (8") frames are best. For N gauge layouts, the TA-4 and 6 are the best size.

For large scales, HO scale and 1/8" = 1ft / 1:100 scales, most species will look best when using the size 2 or 3 foliage but as the scales reduce, it is preferred to use the number 3 or 4 size.

The recommended method options for applying foliage are as follows:

1. Thin down some GLOOP in an open jar or cup with water or paint (colour of foliage). Dip the tree heads into GLOOP or better yet apply to one branch at a time, this method gives the best results.

Apply the foliage to each branch, use tweezers for this as to not get your fingers sticky, or take an appropriate sized poly bag (shopping bag, sandwich bag, garbage bag) and put in an amount of foliage to cover the tree heads you have dipped and toss them in.

Best effects are obtained when the foliage is in small pieces, rather than left in thick solid looking clumps. The foliage does not have to cover every branch. It can be added to itself to build your preferred shape, you can add more in layers if necessary.

2. This second procedure is effectively the same result, except that instead of using GLOOP, you lay out newspapers and apply spray adhesive. USE IN A WELL VENTILATED AREA.

Take a sandwich bag or something similar to protect your hand from the spray, put it on your hand and poke a hole, through which you will put the tree trunk, protecting it also while you hold and rotate the tree as you spray the branches.

You can do a number of these at one time, then take the required amount of foliage, spread it out thinly on a sheet of newspaper and spray it with adhesive, not too heavily.

Put another sheet of newspaper over, then flip, remove the top sheet and repeat the spray. Now apply to the tree frame as previously described.

In either process, the adhesive, unless applied much too heavily, will not be apparent and looses its tackiness after a while.

Smaller trees can be made in a similar manner except that you use a thin finishing nail for the trunk, or use MBS #2 pipe rod in tan, grey, or brown and clip to whatever lengths you want. In this case, you do actually stick the foliage to itself in a clump around the trunk, building it up to the shape you require.

In the MODEL BUILDERS SUPPLY catalogue there are many pre-made trees available in a variety of general species, such as poplar, pine, palm, fir, as well as several deciduous shapes and sizes, if your time and /or inclination are not towards building your own.

If you have an architectural project for which there are no pre-determined landscape drawings and it is up to you to create the setting, consideration must be given to placing a reasonable number of trees and foundation planting on the model to give it the completed appearance.

Use trees that fit the geographic region. Decide if you want to show in the newly planted state, or as it will look in several years time. Plant trees in small groupings. Vary the heights and species. Put in planting beds with ground cover and rockeries.

Sometimes in gardens, on trellis's, arbors, over the edge of balconies, or planters and climbing up walls, we like to see vines and climbing plants. It is not difficult to make such very attractive looking plants on your model.

Once again, using GLOOP or Weldbond and a toothpick with which to apply it, carefully trace a small bead of glue in the pattern of the intended plant, then gently press the chosen colour of foliage (depending on the scale) along the glue line. With a little practice you can get very good results.

Flowers and blossoms are another feature to finalize your landscape detailing. MBS has an attractive range of such colours. These are mostly applied in small or individual groupings on top of the soil or basic bush. The exception is when you want to show a tree in full blossom such as cherry, apple, forsythia or magnolia, then you would apply only blossoms.
For flowering vines & small scale gardens: you can mix the greenery with the blossoms and apply together to save a step.

Try to keep the landscape detailing delicate rather than clumsily plunked town clumps. Above all, do not bury the architecture with trees. Use them to enhance the complete project.

People and vehicles, which are available in various scales by Model Builders Supply will add to the finished effect and help to reinforce the correct scale concept.

Don't rush your model, take time and pride in your work, it will show through in the end and the final result will be a well earned mark.

Model Builders Supply is a world-wide leader in the provision of architectural and hobby related parts, components and accessories with several thousand items in stock for immediate dispatch.

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