

Tuff Play LLC
Guide to Planning a Playground

TUFF PLAY

"Your Playground Provider"



Playground Planning Guide

Volume I

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Introduction

Planning a playground can be a daunting task, even for a seasoned builder or contractor. Many of my customers have no idea where to start; full of ideas without the proper knowledge of the process to implement them. Planning a playground should be fun; but now more than ever it is important to remember that fun is serious business. Proper planning will ensure that your playground meets all of your needs and at the same time minimizes liabilities. Your playground is an investment and like any other investment it should be intelligently planned and executed to insure maximum return with minimal risk. This is why we created our Playground Planning Guide. This guide will serve as a great starting point to planning your playground. We also encourage you to view some of the references included at the end of this guide as well as visit local playgrounds. While there take notes about features you like, perhaps things you would like to include or not include into your new playground. It is also a good idea to watch the children as they interact with the playground equipment and note:

- Are there any pieces of equipment they seem to favor/disfavor?
- Are there any potential safety hazards that you could see arising from particular equipment?
- Does certain equipment encourage or discourage group play and development of social skills?
- Does any of the equipment seem to cause conflict? (Fighting over use of a piece of equipment such as a swing or spring rider)
- Do certain pieces of equipment inhibit visibility of the children while using it, perhaps limiting supervision?

Studying children while playing is a great way to ensure that the equipment you choose for your playground will be both entertaining and safe for its users, what seems fun to adults is seldom fun for children. Now is a good time to note that most children will find the most dangerous equipment the most entertaining, which will bring us into our next section.

Fun, Risk and Liability

Adding a playground to any business will inevitably increase your annual cost for liability insurance. What most people don't know is that certain items may increase your premium significantly. The following items will most likely **INCREASE** your premiums and generally possesses the greatest potential for injury or death. Some insurance companies will not even allow them: **Monkey Bars, Merry Go Rounds, Swings, Free Standing Climbing Structures >5ft in Height, Zip Lines, Most anything that spins, requires climbing or is influenced by momentum.**

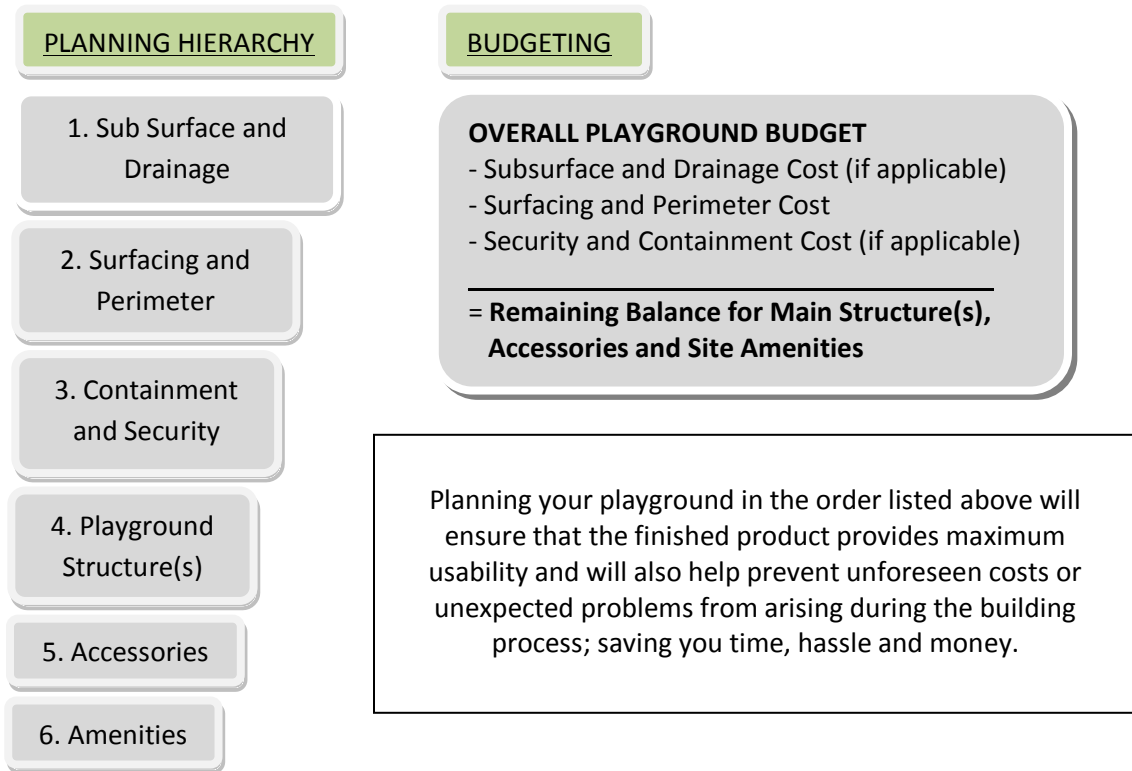
We recommend that you check with your insurance company before starting the planning process. You must find a balance between fun, cost and risk. Only you, with the aid of your insurance agent can determine the appropriate ratio of **FUN: RISK AND COST**. Keep in mind when making this determination that regardless of how many precautions are taken, all playground equipment is inherently dangerous, and with proper supervision the risk of injury on even the most dangerous

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equipment can be minimized. Now that you have done your homework, you are ready to begin the planning process.

The Planning Process

The process for planning a playground is similar to the process for planning a home or building. It starts from the ground up. Even the best built home or building will inevitably fail if it rests upon a weak foundation. The following is a model for the hierarchy of playground planning and budgeting:



Understanding Sub Surfacing and Drainage

Sub surfacing and draining is typically only a concern when the playground is going to be built on an area of new construction, in some cases even areas that were built years ago have draining and sub surface issues that need to be addressed. Sub surfacing and draining on a playground is really quite simple, consisting of only two key factors:

1. The sub surface should be well compacted, graded to promote appropriate drainage and water management, free of debris, foreign objects and hazardous materials.
2. The area inside and around the playground should drain efficiently and quickly. Unless you want a water park, the ground needs to be dry. Puddles, mud and standing bodies of water make for

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a real mess and also promote the presence of pests and mosquitoes. A dry playground is a clean and useable playground.

Before any equipment is installed, draining and sub surfacing must be analyzed and modified if need be. The good news is that this is typically a minor cost. Most draining and sub surfacing problems can be solved with the addition of properly compacted aggregate/soil as well as the implementation of basic but efficient drainage systems.

Understanding Playground Surfacing

Playground surfacing is perhaps the biggest variable in the playground planning process. Keep in mind that the presence of an adequate impact absorbing surface is not an option but a requirement and is perhaps the most important decision you will make in regards to the playground. There are a number of options available for playground surfaces. Anything from sand, wood chips and even gravel can and are frequently used. We only recommend and install the following playground surfaces: Traditional Wood Mulch, Engineered Wood Mulch, Rubber Mulch and Poured in Place Rubber Surfacing. We have developed a chart on the next page to help inform you about your options. The chart gives a brief description of the product, lists the pros and cons of each product and also provides a score based on how each product rates on a 1-5 scale for specific factors such as durability, cost, visual appeal etc. (5 being the highest, 1 being the lowest).

Surfacing Chart									
Product	Description	Cost	Durability	Impact Absorption	Visual Appeal	Maintenance	Total Score	Pros	Cons
Wood Mulch	Traditional wood mulch made of shredded cypress or pine.	5	2	3	4	2	16	<ol style="list-style-type: none"> 1. Economical and visually appealing. 2. Product is easily obtained and readily available. 3. Maintenance does not require special skills or training. 	<ol style="list-style-type: none"> 1. Not environmentally friendly. 2. Requires occasional maintenance and replacement. 3. Product is susceptible to the elements.
Engineered Wood Mulch	Wood fibers combined with manmade adhesives and bonding agents.	3	4	2	3	3	15	<ol style="list-style-type: none"> 1. More durable than traditional wood mulch. 2. Maintenance does not require special skills or training. 	<ol style="list-style-type: none"> 1. Not environmentally friendly. 2. Requires occasional maintenance and replacement. 3. Product is not easily obtained.
Rubber Mulch	Rubber nuggets and mulch shaped pieces made from recycled tires.	2	5	5	3	4	19	<ol style="list-style-type: none"> 1. More durable than traditional wood mulch/engineered mulch. 2. Maintenance does not require special skills or training 3. The highest impact absorption rating. 4. Not biodegradable; product can last 20 + years. 5. Environmentally friendly. 	<ol style="list-style-type: none"> 1. Cost is higher than traditional wood mulch. 2. Product is not readily available or easily obtained.
Poured in Place Rubber	Two layer poured in place rubber surface. Bottom layer composed of shredded tires, top layer composed of EPDM rubber granules. All components bonded with polyurethane based bonder.	1	4	4	5	3	17	<ol style="list-style-type: none"> 1. Visually appealing. 2. Good impact absorbing properties. 	<ol style="list-style-type: none"> 1. Extremely expensive. 2. Degrades with UV exposure 3. Requires expert knowledge for repair and installation. 4. Requires special sub surface. 5. Cannot be transported if playground is to be moved. 6. Short market history.

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Surfacing Continued

In addition to the chart, we will briefly discuss surfacing options a little more in depth. The information below includes our personal opinion about surfacing products based on our experience working with them.

Traditional Wood Mulch

Wood mulch is probably the most commonly used playground surface in the United States and for good reasons. Wood mulch is a very economical option for playground surfacing; it is visually appealing and provides sufficient impact absorption. Costs for traditional wood mulch are 50-90% less than its rubber counter parts (Rubber Mulch and Poured in Place Rubber). We use this product more frequently than any other and have yet to receive a complaint about it. There are a few downsides to wood mulch; it requires occasional raking and replacement and is also not environmentally friendly. The product is readily available, easy to replace and maintain at a minimum annual cost.

Engineered Wood Mulch (Fibar)

Engineered wood mulch or Fibar is a relatively new product on the market. It is made by combining wood fibers and manmade adhesives then forming them in to mulch shaped nuggets. Fibar is more durable than traditional wood mulch but also more expensive. Fibar has a very manufactured look to it, and in our opinion is less attractive than traditional wood mulch. Its impact absorbing properties are said to be greater than wood mulch; however the difference is marginal at best. Fibar is a good option for smaller commercial playgrounds that do not wish to use wood mulch.

Rubber Mulch

Rubber Mulch is actually made of 100% recycled tires. The tires are shredded; contaminants such as steel, oil and dirt are removed. The end product is 99.99% pure rubber, available in many colors. Rubber mulch has the highest impact absorbing qualities of all playground surfacing materials currently available on the market. Where one would typically need 6" of traditional wood mulch to meet critical fall height requirements, only 3" of rubber mulch would be required. This product lasts twenty years and in many cases even longer. It is not susceptible to the elements, pests or UV. It is available in a variety of vibrant colors that can bring life and excitement to any playground or landscape. Rubber mulch is much more expensive than wood mulch however it does not carry the maintenance or replacement cost that wood mulch does as it degrades over time. This is always our recommendation for playground surfacing.

Poured in Place Rubber

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Poured in place rubber is a very new product on the surfacing market. It is made by combining shredded and/or granulated rubber with polyurethane binder; then spreading and troweling it as you would cement or concrete. This product is by far the most visually appealing; elaborate designs, colors, curves and lines can be incorporated. Manufacturers of this product claim that it has impact absorption ratings equal to or greater than rubber mulch; however this is subject to the skill of the installer and the environmental conditions that exist during the installation. The process for properly installing the product is very acute. Too much binder and the surface will be too hard and rigid, too little and it begins to fall apart. Conditions such as temperature and humidity also affect the curing process. Installation also requires a concrete or heavily compacted aggregate base, preferably with a curb or containment perimeter. Because of this and the inflated cost for materials, poured in place rubber is very expensive. Prices range from \$9.00-\$18.00 per square foot depending on color choices, inlays, etc. We install this product and are very good at it, but because of its infancy it is impossible to say for certain that it will live up to the manufacturer's claim of 20+ years. We do know however that polyurethane does degrade with exposure to sunlight and we have seen instances where extreme exposure to sunlight and heat has caused surfaces to weaken and "chip". We stand behind this product and enjoy installing it, but we feel it's our duty to inform our customers about the facts.

Curbing and Perimeter

No matter what type of playground surfacing you decide to use, you will have to have some sort of curbing or perimeter to contain and control the surfacing, be it wood mulch or poured in place rubber. Your options for curbing are limited to:

1. Anchored Wood Beam Perimeter (Pressure Treated 4" x 6; 6"x 6"; etc.)
2. Cement Curbing
3. Plastic Curbing

All three are good options. We recommend either cement or wood curbing.

Containment and Security

Containing and securing a playground is extremely important, and if your playground is going to be located at a licensed childcare facility it is a requirement. The purpose of securing a playground is:

1. To keep the children contained in the playground.
2. To keep unauthorized individuals who may harm themselves or the children out of the playground.

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3. To prevent critters, rodents and anything else potentially dangerous from entering the playground whenever possible.

Fencing is the only option available to achieve this. A minimum 48" fence is required to accomplish this. We recommend a 6' fence. The fence style is up to you; wood, chain link and PVC are all good choices.

Playground Structure(s)

There are literally hundreds of pre-designed playgrounds available on the market from various manufacturers ranging from \$7,000 to over \$100,000. They all essentially contain or can contain the same components including straight slides, tube slides, wave slides, various panels, store fronts, climbers, fire poles etc. In addition to pre-designed playground models, and endless number of custom designed playgrounds can be manufactured and custom tailored to meet all of your needs. The possibilities are far too vast to include in this guide. One very important piece of information to retain about playground structures: **MAKE SURE THEY ARE ASTM, CPSC OR BOTH certified. Never** install a "custom built" piece of equipment, or equipment that does not have **ASTM or CPSC certification**. Once you have an idea of what you would like, we will provide you with options to meet your needs. An interesting point to note is that most playgrounds are modular. This means that you can continuously add on components to them if you so choose and have the room to do so.

Accessories

There are all types of accessories available for commercial playgrounds. From your more traditional accessories like swings, sea saws and spring riders to intricate climbing structures, fitness courses and even zip lines. Once we have a grasp on your space, budget and needs we can provide you with many options and combinations that will compliment your playground. Accessories on a playground are a great way to encourage group play and also control traffic and movement on the playground.

Site Amenities

Depending on how often you plan for the playground to be used, you may want to also include some site amenities into the design. Site amenities are items that are not playground equipment but improve convenience and usability of the playground. Site amenities include: trash cans, benches, picnic tables, bike racks, shade structures, ADA ramps, and more. If you would like to include some of these items in your playground design let us know and we can consult you.

Conclusion

We hope this guide helps to point you in the right direction. This is the first version of this guide and we hope to continually expand and add to it. Regardless of who builds your playground, we want to make sure that the experience is pleasant and that your finished

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product is everything you wanted and more. Before choosing any contractor to build your playground, be sure to do your homework. Ask for references and photographs. If the contractor has built any playgrounds in the area take the time to go look at his/her work first hand. Be sure to verify that the contractor meets insurance, experience and licensing requirements. Below you will find some recommended reading and resources; if you have the time we encourage you to take look at them.

Source	Web Address
Public Playground Safety Handbook	http://www.cpsc.gov/cpsc/pub/pubs/325.pdf
Boundless Playgrounds	http://www.boundlessplaygrounds.org
CPSC Playground Guide	http://www.cpsc.gov/cpsc/pub/pubs/playpubs.html
ASTM	http://www.astm.org/