

Step 3 - Design

You have listened and planned, and now you are finally ready to design your playground! Designing a playground is so much more than just throwing elements into a space. The design phase is about gathering what you learned in the “Community Consultations” and using best practices of playground design to translate the input of children, parents, teachers, and community members into a playground design that can be built from appropriate local materials and fit within your budget. Ready to get started?

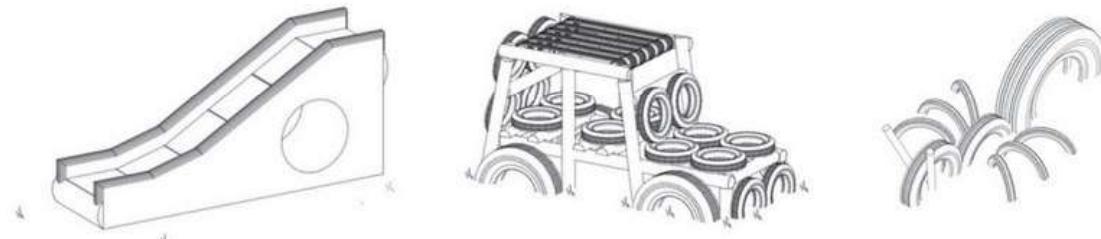
In this chapter we'll cover:

- + Specific resources useful in the design process
- + Examples of how to translate the information and inspiration gathered in the “Community Consultation” process into a playground design
- + 10 principles of playground design
- + How to choose materials
- + How to ensure your design is safe (but still has a healthy amount of risk)
- + How to create a design scheme
- + How to present your design and gather community feedback

Let's design a playground!

Design resources

There are a few Playground Ideas resources that will be helpful in the design process:



Playground Ideas Design Library - playgroundideas.org/designs

Our Design Library has over 150 DIY playground element designs that have been tried, tested, and loved. All elements have been designed to be built from common local materials, tools, and skills and each design has a downloadable PDF with step-by-step pictorial instructions.

Playground Safety Handbook - playgroundideas.org/handbooks

Based on the highest standard of European Union playground safety guidelines, our safety manual breaks down the most common playground hazards into an easy-to-understand, pictorial format. Learn how to differentiate good risks from dangerous hazards and gain the skills to be able to design your own playground elements and ensure that they meet safety standards.

Inclusive Design Manual - playgroundideas.org/handbooks

Designing inclusive playgrounds for children of all abilities requires more than simply adding in handicap-accessible elements. A truly inclusive playground facilitates meaningful interactions between children of different abilities and provides opportunities for challenge, healthy risk and mastery for all children. This resource will deepen your understanding of inclusive design philosophy, and share strategies for designing playgrounds that welcome and celebrate the unique abilities of all children.

Loose Parts Manual - playgroundideas.org/handbooks

"Loose parts" is a term that refers to any material that can be moved, carried, stacked, or altered. Sticks, stones, cardboard boxes, ropes, milk crates – the possibilities are endless! Not only are loose parts cheap and easy to find, but they're endlessly interesting to kids. Unlike fixed equipment, loose parts allow children to recreate their playground every day from the materials provided. Full of beautiful illustrations and helpful tips and tricks, the Loose Parts Manual will guide you through gathering materials, setting up a storage and maintenance system, thinking through safety concerns, and training teachers. Whether you're creating a loose parts playground from scratch or adding materials to your existing site, you'll find everything you need to get started.

Drag & Drop Designer - playgroundideas.org/build-playground

Our online Drag & Drop Designer tool allows user to create a full 3D, professional looking playground site plan. You can add any of our 150 playground element designs as well as school buildings, trees and other features to match your space, and upload images of your own design sketches and background photos to truly customise your design. Once you're finished, save, print, share to Facebook or add your design to your playground project page. Create a free account at playgroundideas.org and access the Drag & Drop Designer from your user dashboard.

Cut & Paste - playgroundideas.org/handbooks

If you're looking for a lower-tech way to design your playground, we've got you covered too! Download our Cut & Paste manual and you'll find all our playground elements scaled to size. With paper, scissors and glue, you can map out your site, cut out the playground elements you want, and start designing!



A case study of playground design

At this stage in your playground planning, you should have:

- + Design input from children, parents, teachers, and community members
- + A good idea of what materials and skills are available to you
- + A budget

Your job in designing the playground is to figure out how to translate this information into a physical space. Doing this isn't an exact science - it requires imagination and creativity. Our design process is typically guided by four steps:

1. Distilling "themes" that arose from the "Community Consultations"
2. Using these themes to create goals that the design will accomplish
3. Identifying available resources (materials and skills)
4. Creating a design that serves the goals, is inspired by the themes, and capitalizes on available resources.

This may sound a little tricky if you are new to this so to give you a better understanding of how a "Community Consultation" might be transformed into a design, take a look at this example from our own work in Kenya.

Reuben Centre, Nairobi Kenya

Context: Ruben Centre, a primary school for 2,000 kids in the Mukuru slum of Nairobi, Kenya. With a population of over 600,000, the Mukuru community of Nairobi is one of Kenya's largest slums. Ruben Centre is a resource hub for the community, offering education, health, financial and social programs to children and families in Mukuru.

Community Consultation: In the consultation phase of the project, we met with teachers, parents, and members of the administration to discuss their vision for the playground and to learn more about their school and surrounding community. Students showed us their unique local games, took us on tours of their special spaces within the grounds, observed and discussed their peers at play, and drew pictures of how they like to play. Several themes arose from these discussions and activities:

- + Lack of spaces for play in Mukuru. One teacher who grew up in the community recalled a few empty spaces he played in as a child, but lamented that today the congestion of Mukuru has ballooned beyond capacity. The only open spaces left are unsafe, leaving many parents to confine their children's free time indoors. Most families live in extremely close one room quarters, so even playtime indoors is limited. Teachers described how the play yard at Ruben is the only open, safe space for children in the surrounding area.
- + Whole child education. Many of the parents of students are engaged in the centre's on-site services – a microfinance program, vocational training classes, a health clinic, and various micro-enterprises – modeling responsible practices for their children. Staff expressed their belief in the importance of Ruben students learning and practicing a wide variety of life skills to confidently navigate their futures.
- + Building a playful school. The staff were enthusiastic about using every available empty nook and cranny throughout the school grounds for play elements. The school director's orders to us were, "I don't want a playground, I want this school to be an entirely playable space."
- + Importance of imaginative play. Children described, modeled, and drew pretend play as families, shopkeepers, drivers, carpenters, musicians, "police & thieves," soldiers, and animals. Imaginative play also included violent themes – police shooting thieves, playing with pretend guns, knives, bombs, etc. – likely, in some part, reflections of their processing of scenes they had witnessed themselves or heard about in their surrounding community.

Available Resources:

- + Ruben Centre was located near to the industrial centre of Nairobi, so access to typical building materials was no problem.
- + The Centre had a full time Artist on staff who painted murals at the school and taught art classes to kids.
- + The Centre was rapidly expanding new buildings, so they had a team of builders, carpenters and masons already working at the school.
- + The construction of a new classroom block had resulted in an enormous pile of dirt that was currently unused.

Goals for Design:

- + Inspired by the themes that arose in the Community Consultations, we wanted to build a playground that would:
- + Give children full ownership over a space. In a context where there was very little space for children, we wanted the playground to truly feel like it was "theirs."
- + Provide space and inspiration for imaginary play. It was clear pretend play was a vital tool children were using to understand and process their experiences.
- + Was extremely durable to withstand the raw energy of 2,000 children daily.
- + Have plenty of opportunities for active play since for most children playtime on the playground was the only opportunity in their day for active, free play in a safe space.

Design Scheme: A concept plan was developed for a series of seven "pocket playgrounds" tucked throughout the school grounds that would allow for a variety of types of play and would create a movement flow throughout the school that could accommodate heavy use. The play spaces included:

A "kids town" set up to look like shops and spaces within the outside community. The town included a bus, several cars, and a petrol station, as well as a mechanic's shop, grocery, restaurant, a bank with ATMs painted as murals, a radio station with talking pipes, an internet cafe with chalkboard "computers," and health clinic. The real health clinic onsite donated some of their old equipment to be used in the play clinic. The vision of the "kids town" was to give Ruben students a whole little world in which they were in control.



Next to the “kids town,” a mud molding station was built, where kids could model items to “sell” or use in the shops.



The design scheme also included a giant see-saw balance hybrid airplane. Planes from the Nairobi airport were often taking off above the school, but few of the students had ever seen a plane close-up. On the playground airplane, kids could take a turn as the pilot, or ride up and down on the see-sawing “wings.”



A giant, nearly indestructible concrete and tile slide was built that could accommodate several children across at once.



A big, open football pitch already existed and was kept as a free space for active play or a gathering space for school assemblies or activities. Moveable goalposts were created to allow the space to adapt to one large game for older children or up to 3 smaller games for younger children.





The football pitch was rimmed with moulded earth hills made from the dirt leftover from construction projects. The hillsides created a track around the space and also allowed lookouts for kids to see what was happening in other parts of the play space.



Large swingsets and an adventure course with a climbing net, bridges, monkey-bars, and a climbing dome. The elements were arranged to encourage flow and movement throughout the space and prevent "traffic jams."



Next to the block of preschool classrooms, a giant sandpit with tire animals and a cubby space with a small wall around the area provided a quieter, less trafficked space for the younger kids that was protected from the bustle of the rest of the playground.

Throughout the space, the school's resident artist painted murals, adding character to the shop signs and a skyline backdrop to the airplane. These little details brought the space to life.

10 principles of playground design

How you will translate the information and inspiration from kids, parents, teachers, and community members into a design will depend on your context. Here's a few principles of playground design to help guide you:

1. Design for different types of play.

Children use different types of play to understand the world around them and to master life skills. Unfortunately, most playgrounds only focus on active, physical types of play. A good playground challenges and promotes children's growth by providing opportunities for children to engage in multiple different types of play. As you're creating your playground design, consider how you can accommodate different types of play and ways for children to use their bodies and minds and interact with the environment and others:

- + Active play- Running, jumping, climbing, kicking, and punching. Twirling, swinging, spinning, and rolling around. Moving your body up, down, and around.
- + Sensory play - Touching different interesting textures, smelling flowers and plants, hearing music and sounds, tasting edible plants and fruits, seeing different perspectives and angles as well as beautiful shapes and colors.
- + Creative play - Drawing, crafting, painting, coloring, writing, singing, drumming, and dancing. Creative expression allows children to communicate and connect.
- + Imaginative Play - Dressing up, make-believe, and pretend play. Play houses, pretend ships, dolls, costumes, and props let children act out imaginary scenes and adopt roles.
- + Manipulative play - Building, molding, manipulating, sifting, pouring, scooping, stacking, combining, and altering.
- + Social play - Talking, sharing, cooperating, taking turns, following "rules," and playing sports.
- + Reflective play - Watching, resting, reflecting, thinking, daydreaming, and just staring into space.

Of course these aren't the only ways children play, but these categories help us to broaden our understanding of play. Use these play types to guide your design and see how many you can include space for on your playground.

2. Create a sense of place.

Incorporating a “sense of place” into designs took practice for us to learn. This is a quote from a volunteer on one of Playground Ideas’ earliest playground builds in Thailand:

“We built a playground once based around the theme of a castle, when it was nearly finished one of the builders came to me and said ‘What is a castle?’ The playground looked great and the kids loved it, but deep down I knew we had missed something important.”

A playground without a sense of place looks generic, like it could be anywhere in the world. A playground with a strong sense of place speaks to the culture, location, and “spirit” of community. Feeling rooted in the place and culture you live in is key to many positive outcomes not only for children, but also for the whole community. It fosters a sense of civic pride and belonging. The stories we tell, the yearly celebrations, the landscape, the architecture, the people, the weather, the jokes, and traditions all make us feel connected.

Infuse a sense of place into the details of any pretend play areas - like play houses or shops. Really focus on the cultural specifics here to create an authentic experience. How are houses built in this community? What do the kitchens look like? What are the names/logos of local businesses?

The aim is for a playground to become a special place, a unique symbol of the community. Spaces for children to play are expressions of local imagination and spirit. What will make your playground different from any other playground build anywhere else in the world?

3. Trust children’s creativity.

Adults have a tendency to design play elements with a singular purpose: slides are for sliding down, swings are for swinging on, and monkey bars are for traversing. But children are boundlessly creative and they will always find ways to use elements for purposes they weren’t originally designed for. A good playground should encourage and trust children’s creativity to take the lead. As much as possible, include playground elements that can be used in many different ways. Take a cue from renowned playground architect, Günter Beltzig, “Of course, us adults, we like a beautifully hand carved, wooden motorbike. But what if the child prefers a pony or a unicorn? The more room there is for interpretation the better.”

One of the best ways you can leave room for interpretation in your design is by adding “loose parts” to your playground. “Loose parts” is a term that refers to any material that can be moved, carried, stacked, or altered. Loose parts are endlessly interesting to kids because unlike fixed equipment, loose parts allow children to recreate their playground every day from the materials provided. They can transform everyday materials like sticks, cloth, and milk crates into anything they dream up. You can access our “Loose Parts Manual” at playgroundideas.org/handbooks.

4. Make room for secrets and surprises.

Spend an afternoon taking a walk through a city with a young child and you'll look at the world through different eyes. They'll be hypnotized tracing where the crack in the sidewalk/footpath leads, fascinated by the movements of falling leaves floating through the air, and absolutely delighted by the way the rubbish bin lid swings.

Children are finely attuned to the small wonders of the world. For them, the magic of a playground sometimes lies more in the little details than it does in the structures and big elements. Throughout your design, add in little surprises that can be discovered whilst playing. Little painted pictures in corners and nooks, secret hiding places, interesting textures, handles and levers, peep holes, unexpected sounds, and talking tubes all make and keep a playground interesting. While busily building, these details can easily be missed or forgotten so prioritize them in your design.

5. Consider the “flow” of the space.

Children in a natural state of play do not move in straight lines. Having a playground that “flows” well involves having all the components of the playground well-connected. For example, say there is a path leading from the playground entrance to the rope bridge, cargo net, and monkey bars, but in between these you can divert off to the hopscotch, slide, or tree house. Good “flow” will give the child different directions to explore each time they step into the play space and will help avoid traffic jams on the playground.

6. Create zones for different energy levels

Consider what atmosphere or feeling you want to foster in different parts of the the playground depending on what activities will likely take place there. For instance, a corner with a slide and rope swing might be active and loud, while a corner with a garden and bench might inspire more quiet reflection. Many playgrounds try to utilize space by putting extra elements like seats or chalkboards underneath platforms and climbing structures. This can work if the activities are similar, but imagine trying to chat and have a conversation with your friend or draw a picture while people stomped and shouted above you. You'd rather be somewhere quiet, wouldn't you? Separating spaces by energy levels creates space for different kinds of activities. Create room on your site for children to scream and shout, talk and laugh with their friends, or quietly daydream.

7. Don't get too preoccupied with looks.

All children deserve a beautiful place to play - one full of interesting colors, shapes, and textures. But as you're designing the space, don't get too caught up in how the space will look. Children's play can often look messy and chaotic - and that's ok! Remember the point of a playground is to provide a space where play can happen, not just a pretty yard. Playability is more important than aesthetics.

8. Design for intersections.

When designing your site, consider the needs of children of different abilities. This can include mental and physical disabilities, but it also extends to children of different ages, abilities and strengths. Trying to design a playground in which every inch is accessible to every child who might play on it will result in a pretty boring play space. It can also have the unintended consequence of segregating children of different abilities. Instead, focus on designing for “intersections,” or opportunities for children of all abilities to interact and play together. In designing spaces of “intersection”, it’s helpful to think about ability on a scale, instead of categorizing children as “disabled” and “able-bodied.” When you think about the strengths of children on a scale, you can design spaces where features have a range of difficulty instead of a distinction like a handicap slide. A rock climbing wall is a good example of a feature with a scale of difficulty. A rock climbing wall has several levels of difficulty all on the same wall, so a beginner and a pro can be climbing next to each-other and challenging themselves in ways that are appropriate to their abilities.

Within your design, look for opportunities where children of different abilities end up interacting and playing together. This could look like a cubby-house with a sandpit and bucket/pulley at the bottom so children playing below can interact with children up in the cubby-house, or talking tubes that connect children in different parts of the playground space.

To learn more about designing for children of all abilities, check out our “Inclusive Design Manual” (playgroundideas.org/handbooks.)

9. Work with, not against nature.

The best playground is the one nature provided. Tree limbs are perfect for climbing and swinging on and river rocks make the best stepping stones. The ultimate sandbox is a big stretch of beach and a handful of shells. Incorporate nature into your design as much as possible by adding gardens, trees, flowers, boulders, stumps, and logs.

In addition, look at how you can work with the natural features that already exist in your space. Are there any hills? Build your slide into the slope instead of building a ladder or ramp. Are there any trees in your space? Position the sandbox underneath so kids can tinker and shovel away in the cool shade. Where is the best natural line of sight in your space? Consider positioning benches for the teachers here.

Sometimes removing a dead tree may be necessary, but before you clear-cut or remove any natural features, consider how they can be incorporated into your design.

10. Don't forget the basics!

Be sure to include basic practical necessities in your space like:

- + Shade
- + Drinking water
- + Seating for adults
- + Trash cans
- + Storage for any loose parts or play equipment
- + Any necessary playground rules or signage

Mapping your space

Prior to the playground design, you will need to map your playground space. Having an accurate map of your space will help you design a playground that fits into your space well. There are a few ways you can do this. If you are building at a school or organization, ask the director if the architect of the building made any blueprints of the space. The space may have already been accurately mapped and you just didn't know it yet! If you don't have a blueprint of the space, try locating your space on Google Maps (www.google.com/maps). This will give you a good idea of the aerial shape of your space, which will assist you as you map out the features. You can calculate distances on Google Maps by following the directions on this webpage: goo.gl/5kp3oi.

It is also possible to map your space by hand. Here's how:

1. Draw a rough map. On a large notepad, sketch out your space. Indicate any features like buildings, large trees and shrubs, property lines, existing playground equipment, roads, paths, and fences. Don't worry about accuracy yet, just focus on noting everything in your space.
2. Measure features. Using a measuring tape, measure the dimensions of any features you indicated on your map like buildings, fence lengths, and the spread of shrubs or trees. Add these measurements to your map.
3. Plot the locations of features. Using stakes and string, create a straight line along one edge of your space. Measure the distance from the string to each object on your map, being careful to keep the tape measure at a 90° angle from the string. Confirm accuracy by measuring from other boundaries as well.

4. Map your space with graph paper. Using a ruler and pencil, transfer your measurements accurately to graph paper. If you are working with a small space, use 1 inch to represent 4 feet. If you are working with a large space, use 1 inch to represent 20 ft. Alternatively, you can use 1cm to represent 1 meter. If you are working with a large space, use 1 cm to represent 5 meters.

5. Mark important elements on your map. Now that you have a good map to work with, revisit your space and mark any important elements that may impact the design. Measure these features where possible and add these to your map. Look for:

- + Elevation changes, slopes, and hills. Indicate direction on your map.
- + Shade. Visit your space at times when you anticipate your playground will be heavily used, like recess or after school. Indicate any patches of shade that are present.
- + Mark any access to water or electricity.
- + Mark doorways, entrances, and traffic patterns (i.e. if a classroom of children were entering the playground for recess, where would they come from?)
- + Does the space experience any flooding or environmental changes throughout the year? Does it have any trees that shed their leaves during different seasons? Mark these spaces on your map.

Playground safety & risk

No playground will ever be injury free, EVER. In fact, it is guaranteed that children will be injured during childhood play. Bumps and scratches are a natural part of the learning process as children grow up and most people would agree that if we created a world where a child could never fall over that this would create other, worse consequences for the child. Children need challenges to grow and develop and they will experience some consequences along the way.

So, it is really important to differentiate between 'bad hazards' and 'good risks'. 'Bad hazards' i.e. are those risks that offer no value to children and could cause serious harm. All the most common hazards are covered in our Playground Safety Handbook (playgroundideas.org/handbooks) and they can and should be eliminated without loss of play value to children. Please also refer to your local Safety Standards (if you have them). Use common sense and seek expert advice (if it is available) to assess and remove these hazards in your playspace.

'Good risks' on the other hand are challenging activities that provide value to children's learning and development and are unlikely to NOT cause serious harm. These risks should be included. These activities often involve tricky movement, agility and balance. Eliminating them can be counterproductive and therefore common sense must be introduced when evaluating these activities to manage and support them effectively.

A good playground reduces “bad hazards” as much as possible while still incorporating a healthy amount of “good risk.”

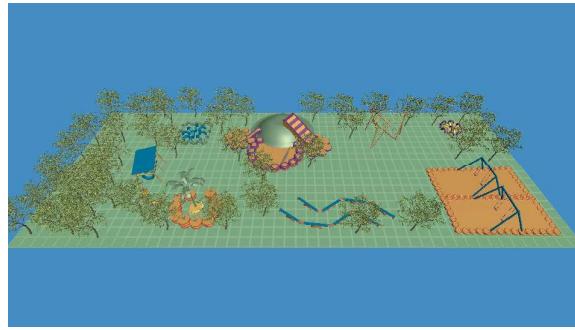
Please see our "Playground Safety Handbook" which deals with the concept of hazards and creating challenging risks in detail here : playgroundideas.org/handbooks. During the design and build phases, it is essential that you review this handbook as it will guide you through how to watch out for each of the hazards listed above and how to prevent common playground accidents by:

- + Adding soft fall material
- + Calculating adequate space for soft fall zones
- + Building platform and guardrails at appropriate heights

Please do not build a playground without referencing this resource and any playground building standards that apply to your location. For a list of global playground building standards, please visit: playgroundideas.org/global-safety-standards.

Creating a design scheme

Once you have an idea of what your playground design will include, you need to sketch your elements into your site plan to scale. There are three ways you can do this:



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Google SketchUp - www.sketchup.com

If you want to get more technical, try using SketchUp, a free 3D modeling software created by Google. If you have never used 3D modeling software before, it will take some time to learn. Sketchup offers free video tutorials to get you started: www.sketchup.com/learn/videos/826.

Gathering community feedback

Once your design scheme is complete there is one very important step left. It's time to take the design back to the community to get their feedback. When you present the design, make sure you thoroughly explain each area and element and use lots of photos to show what the playground will look like.

If possible, it's a good idea to walk through the design on the space together. Seeing where elements will be laid out in the space may help people to think through any challenges you may not have anticipated like, "we can't put the slide in that corner, because there needs to be space on this side of the site for a car to be able to drive through." Getting any of these issues sorted early on will avoid unforeseen challenges during the build.

Be sure to create an atmosphere where the community feels free to share honestly when you present your design and encourage people to ask questions and share their thoughts and any concerns with the design. Once you have gathered feedback on the design, incorporate any necessary changes into the design scheme before you proceed to the "Build" stage.

Remember, if you have any questions at all along the way, the Playground Ideas team is here to help! Drop us an email at info@playgroundideas.org - we'd love to hear from you!