SKATEPARK DESIGN

1. Hire an experienced skatepark designer
2. Get the local skaters and action sports community involved
3. Utilize green design and construction practices (see next page)
4. Skatepark design should NEVER be standardized

An experienced skatepark designer will understand the nuances of skatepark functionality, layout and design. They will take the requests from locals and implement them into a cohesive design that addresses potential traffic patterns and the needs of the community.

NOTE FOR ADVOCATES:

• It’s unlikely you will meet everyone’s specific skatepark design desires, but you can create a design that will serve the whole community.
• Locals may be interested in designing the layout of the space. It’s best to work with an experienced designer to make sure community design ideas are heard and implemented the right way.
• (Amateur community designer tip: draw the full scale skatepark layout on a parking lot with chalk to get an idea of spacing and flow)

NOTE FOR BUILDERS:

When at all possible, please form with dirt, not with construction foam. The short term cost savings do not outweigh the long term environmental impact.

EXPERT ONLY - Planning, skatepark design and skatepark construction are part science, part artform. “How precise could it possibly need to be?” you might ask. Skateboards and other action sport vehicles measure their wheels in millimeters.

TALK TO YOUR SKATEPARK DESIGNER ABOUT DESIGN CONSTRAINTS AND CONSIDERATIONS

DESIGN CONSTRAINTS

Your local civil engineer and your designer will need to discuss the following design constraints regarding your specific skatepark site options.

BUDGET
Only design what you can pay for.

SOIL
Some soil lends itself to construction, some doesn’t. Sometimes better soil needs to get trucked in to make the build easier and last longer. Make sure your skatepark builder/designer and city have a conversation about needs.

TOPOGRAPHY/GRADE/ELEVATION CHANGE
How can you design to work with the existing shape of the land?

STORMWATER MANAGEMENT
Rain water normally sinks into the ground where it falls, spreading out evenly. When you cover the ground, all that water gets collected and focused into one spot! Make sure it goes to the right place. Standing water in a skatepark is unacceptable. It’s dangerous and will degrade the skatepark over time.
WATER TABLE
This is the depth below which the ground is saturated with water. If you build below this, or below where the table shifts with common storms or seasons, you’ll get water seeping up into the skatepark.

FROST LINE
The depth to which ground water in soil is expected to freeze. If you live in an area with cold weather, you may have to build certain elements (footers) deeper than the frost line to prevent things from shifting due to water freezing.

FOOTINGS
Concrete extensions into the ground that act as a foundation for certain elements, and prevents them from shifting over time. Particularly important in places with troublesome soils.

UTILITIES AND EASEMENTS
Many important things exist underground. Electrical wiring, sewer lines, telecommunications cables etc. Your designer will work with your city’s civil engineer to understand what the restrictions are for your site. Easements mark property lines. You can only build in certain areas.

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SUN GLARE ORIENTATION
Understand where the sun rises and sets in different seasons in your town. Avoid positioning bowl deep ends or large walls where the sun sets right into your eyes.

DISPLACEMENT OF TREES (tree vs concrete)
There are ways to work around existing trees. Consider what they need to survive, but also look out for species that drop danger pebbles (seeds and such) onto the skatepark.

Obviously most of these sound like they are meant for civil engineers and skatepark companies, but if you know this language and communicate with project stakeholders, you’ll minimize the chances of a weak link in the chain of successful skatepark development.

(For more information on the intersection of skatepark and urban design, see the PSDG)
SKATEPARK CONSIDERATIONS

After you've selected the best site option for your project, you can begin to consider designing the skatepark itself.

STYLE OF PARK
Modern skateparks should be around 50% “street” and 50% “transition.” Street elements are designed to mimic obstacles found in urban or industrial environments. This includes things like stairs, ledges, banked inclines, rails, curbs and more. Transition elements are designed to mimic the curved radius inclines of backyard pools and ramps. This includes quarter pipes, hips, corners, spines, escalators and more. See the Obstacles page to learn more about each type of skatepark element.

BASIC ELEMENTS
There are a few elements that should probably be at every skatepark. When sized, built and positioned properly, these basic obstacles can inspire and handle all types of users - from beginners to professionals. Some of these obstacles are: miniramp, flat bar, ledges, manual pad, launch, bowl corners, pyramids, etc.

FUNCTION OVER FORM
It has to “work.” Only hire experienced skatepark design firms and skatepark specialty construction firms.

FLOW, CAPACITY AND SPACING
Obstacles are words, a good skatepark design is poetry. Only experienced skatepark professionals know this language.

ACCESSIBILITY AND BEGINNER AREA
Inclusive design for adaptive skaters. Gentle slopes, ride on grinds for beginners.

RECREATION VS. COMPETITION
All skateparks are recreational - that’s their purpose. You can have contests at any skatepark, but to have big, well known contests, certain criteria need to be met. It is not necessary to meet these criteria to make a successful skatepark. There’s no such thing as an “Olympic” skatepark, aside from the specific parks used for the actual Olympics, but there are specific sizes and requirements (in and around the actual skatepark space) necessary for world class skate events as dictated by those who produce those events. (see Appendix F)

REST AND VIEWING AREAS
Skateparks located in areas with diverse attractions will draw spectators. Provide a place for observers to check out the action without feeling like they’re in the way or at risk of getting run into. Viewing areas should be separated by lower barriers so that conversations can occur face to face. Low seating walls, or even bollards or boulders, are excellent ways of delineating these areas. Viewing areas can be made “inactive” by employing textures that are not conducive to skating, such as roman pavers or cobblestones.

COMFORT AND AMENITIES
Basic park amenities are important to the success of a skatepark. Users, and the people who support the young users, should have a place to be comfortable. Ideally many of these common comfort amenities are already available on site, but if they aren’t, it’s worth considering adding them to the project if possible. This includes things like bathrooms, shade, water and plenty of benches.

LIGHTING AND SHADE
Accessibility lighting for safety, sports lighting for greater usage time. Shade sails for cooling temperatures on a hot and sunny day will also increase usability of the park.
Note on lighting: The added expense for good sports lighting and shading can greatly improve the use-hours and accessibility of the space. Ancillary security lighting, if not in place, can improve the accessibility and comfort of the space.

FENCING
Skateparks don’t need fences. They send the wrong message to the users and spectators - that skaters and the space are inherently dangerous. This can foster a lack of communication and understanding in a shared community space that can lead to discord. It can also create a feeling of inaccessibility for new users. Fences often end up dividing the community space in the wrong way.

There are only a few “reasons” behind wanting to fence a skatepark. 1) To keep skaters out of the space during off hours, 2) to keep small children from wandering into the space, 3) to block off large sheer drops, or 4) to prevent children from chasing runaway sports equipment into a busy street.
SUGGESTED SOLUTIONS:

1. Ensure the skatepark has appropriate hours (dawn to dusk or greater with lights). Have simple signage regarding closing hours, reasons why it closes (neighbors, safety, etc.) and notice of enforcement. Enforce where necessary, but having reasonable hours of access to include all types of users is key.

2. If the skatepark is close enough to where small children play, divide the space by a small fence, (3-4’) max to indicate the skate area. For areas that aren’t adjacent to kids play areas, you can also use paint, curbs or markers. If you do use a fence, consider the need for a maximum height of the bottom of the fence (around 4’). If it’s too high off the ground, stray boards can roll underneath.

3. Normally skateparks are built down into the ground. If a shallow water-table makes this difficult, you may need to build up and will have tall, protruding decks. Consider the need for appropriate safety railings.

4. There should always be some form of protection between a busy street and any type of play area. A small fence is reasonable in this case.

EMERGENCY BUTTON/COMMUNICATION
Some park facilities employ an emergency call button so locals can contact public safety or emergency healthcare services.

COLORED CONCRETE
Skateparks don’t have to be bland. For a small increase in cost you can have a colorful space that is aesthetically pleasing to all residents and users.

ACCESS PATHWAYS
Most permanent pathway construction is lined up during the design phase. It’s worth anticipating organic desire lines to and from the skate space from all angles and planning accordingly. You can also wait to see where the desire paths start to show, then make pathways using this organic user-informed direction.

PLANTING
If there is shrubbery and planting around the perimeter of the park or inside the park, there’s a risk of those plants getting beat up by stray boards. Be sure to consider designing barriers to protect plants and trees wherever possible. Beware of planting trees that drop lots of seeds or shedding onto the park space.

LOCAL FLAVOR
How can you incorporate your town’s unique history into the design? A railroad track grind rail? A colored concrete strip to represent a local river? A stack of books as a grind ledge to pay homage to local educational institutions? Think creatively and talk to your designer about how you might represent your community well. See TSP’s Signature Elements PDF for more.

CREATIVE ETHOS
Skateparks should never be standardized. While it’s always a good idea to get basic staple obstacles in every skatepark, and many obstacles function best when sized appropriately, maintaining the creative traditions of skateboarding and skatepark design is key to the survival and progression of these spaces and the people they serve.
SUSTAINABLE DESIGN & CONSTRUCTION
BECAUSE YOU CAN'T SKATE WITHOUT A PLANET

A built environment always impacts the local surroundings. With a few simple decisions during the planning process, you can ensure that new construction is environmentally responsible and supports the local ecosystem. It can even make your project eligible for more grant funding from The Skatepark Project and others.

**PRACTICE**

- CENTRALIZED SITE LOCATION
- MAXIMUM ACCESS TO AREA
- REPURPOSING A SITE
- SITE REMEDIATION (BROWNFIELD GRANTS)
- CONTEMPORARY DESIGN
- GREEN SPACES WITHIN SKATEPARK
- PROFESSIONAL CONSTRUCTION
- LOCAL / RECYCLED MATERIALS
- RECYCLED AGGREGATE AND FILL
- STORMWATER MANAGEMENT / BIOSWALE
- SHADE TREES
- SUPPLEMENTARY CEMENT MATERIAL
- FLY ASH INSTEAD OF PORTLAND CEMENT, CARBON SEQUESTRING CONCRETE & MORE
- HEMP FIBERS IF USING MIXED FIBERS
- EDUCATIONAL SIGNAGE
- NATIVE AND HEARTY PLANTING

**BENEFITS**

- Reduces local travel
- Increases foot/bike traffic
- Rehabilitates space into asset
- Rehabilitates toxic space, funding
- Attracts more users, greater return on investment
- Place to rest, natural environment
- Gets the job done the first time
- Reduces construction waste, local flavor. Cycle forward new materials.
- Reduces carbon footprint. Don’t use foam blocks to form
- Reduces erosion and storm discharge pollutants, recharges aquifer, provides habitat.
- Sequester carbon, reduce ground temperature, provide habitats. Avoid shedding trees that can dangerously disrupt skate space.
- Reduces carbon footprint, increases durability and strength of material.
- Fly ash cement needs increased hydraulic load support due to weaker setting during early stages.
- Better alternative fiber
- Inform users of the reason and importance of these decisions
- A stronger local ecosystem. Work with the city and designer.
ACCESSIBILITY, CAPACITY & FLOW

MAXIMIZING FUNCTIONALITY
Considering accessibility, capacity and flow will ensure that the skatepark will serve more people, have a functional and enjoyable physical rhythm between obstacles and each obstacle will have the run up and run out needed to work properly. Experienced designers and builders will understand the nuances of a good skatepark layout. They will utilize existing topography, local obstacle requests and stormwater management needs to create a space that allows traffic to flow safely - end to end or around a circuit. This is the nerdy design stuff that skaters don’t often consider - but good skatepark advocates and skatepark designers must take these factors into consideration in order to create a good park.

INCLUSION
WITHOUT LIMITATION
SECURITY LIGHTING for access
WHEELCHAIR ACCESS RAMPS / DECK WIDTHS (consider widths from local/national accessibility ordinance as well as local user suggestions. Often 36-42” wide with 5 degree incline (1:12 inches)
EXIT ROUTES FROM BOWLS FOR WCMX, can double as channel (appropriate width and incline)
RIDE ON WCMX (WHEELCHAIR MOTOR CROSS) LEDGES FOR GRINDS, (insert text: 4”-12” wide, clean drop off for all users to skate)
REST AREAS
FOR VISUALLY IMPAIRED RIPPERS CONCRETE COLOR CHANGE at transition base for visual cues
PAINT COLORS FOR OBSTACLES (flat bar with bright paint, painting around ledges)
MARK TOP OF AREAS OF INVISIBLE DROPS (stairs where there would otherwise be a bank)
FOR HEARING IMPAIRED RIPPERS POTENTIAL MINIMAL VIBRATION STRIPS for hearing impaired rippers.

CAPACITY
Because there are no street signs, stop lights or lane markers at the skatepark, skaters utilize their own lines through the space. This means they need to have space to change lanes to steer around others, they need wide decks and areas to wait their turn, and enough separate “rooms” in the park to still get some runs in even when the place is crowded. That said, no amount of clever design work can make up for a skatepark that is too small for the user base in an area. Is your skatepark over-crowded all the time? Time to work on the next park to meet the need.
Lanes: Paths back and forth (or around)
Rooms: Independent skateable sections

Do you have “lanes and rooms” that allow for multiple users to ride the park at once? Are there enough “lanes” for multiple skaters to ride back and forth simultaneously? Can your one giant bowl be converted into two interconnected medium bowls? That would “double the capacity” of your bowl section. Your skilled skatepark designer will understand how to account for potential traffic patterns given your allotted space and budget.
Flow can be defined as the overall combined functionality of obstacle types, specific geometries, proportions/sizes, orientations and spacing of skatepark elements. The goal is for each obstacle to function both independently (often retaining functionality regardless of rider approach angle) and in a series with other obstacles. Consider designing so someone can hit every wall in the park without pushing while still having plenty of open flat space. This is a tricky balance to achieve.

Good skatepark flow is dependent on obstacle selection, proportion and positioning. All three of those depend on properly executed construction. Most skatepark layouts are in a grid fashion, with lanes and rooms interacting with each other spread out over the site. Riders go back and forth in the lanes and spend time in the rooms. Some skateparks use a circular flow design, intending for riders to all go in roughly the same direction around the space.

Minimize dangerous lane intersections. Your skatepark designer will be aware of where lines intersect. It's helpful to consider minimizing these intersections where there could be more opportunity for collisions.

A roundabout or circuit design can increase flow, but keep in mind that learning something on a curved obstacle is more difficult (and less accessible) than a non-curved obstacle. Straight/Flat ledges/rails and flat walls (non-curved/bowled quarter pipes) are far more accessible than their curved counterparts. It’s arguably better to have purposeful direction change from selected obstacles (hips and corners) rather than an entire skatepark that’s full of curved obstacles. It’s also worth ensuring that circuit style skateparks have clear lines of sight through the space for users to avoid collisions.

These and other reasons are why you should hire an experienced skatepark designer and builder. Most poorly designed skateparks look exactly like normal skateparks to the untrained eye and/or until you use them.

**COMMON SKATEPARK LAYOUT/DESIGN ISSUES**

- **Redundant (Repeating Obstacles)**
- **No Deck**
- **No Return**
- **No Roll Away**
- **No Run Up**
- **One-Sided (Stance Limited)**
- **Too Small**
- **Too Tall**
- **Good Redirect**
- **Unfeasible**
Skateparks should never be cookie cutter or standardized. It’s the responsibility of project leaders and skatepark designers to work together to keep skateparks creative and unique. With that responsibility in mind, some obstacles are commonly used (in certain size ranges) in most skateparks. These basic obstacles, when well designed, well constructed, well finished, well positioned and properly linked together, create an accessible space that flows well, safely serves many people at once and is easy for beginners and professionals alike.

Remember: these obstacles are worthless to the community unless an experienced skatepark builder creates them with the right geometry, finish and spacing.
BEGINNER OBSTACLES
Experts can enjoy beginner obstacles, but beginners need accessible features.

RIDE ON RAIL/LEDGE
Grind early, grind often.

SMALL BOWL
Basics of carving for beginners, timeless fun for all.

MINI RAMP
The swing set of action sports. Accessible and always fun.

LAUNCH RAMP/KICKER
Cheap airmiles.

SNAKE RUNS & PUMP TRACKS
Snake runs and pump tracks can be good options to increase accessibility to novice riders or people who prefer cruising to tricks. It can be a great place for beginners to learn to ride because it gives them a clear and single pathway to follow. The main risk behind this type of design decision is that the local riders may quickly outgrow the capability of the terrain. For that reason, they take up so much space and cost, it’s worth making sure you leave room for the primary skate space and the features you want in the skatepark. Pump tracks and snake runs shouldn’t take up more than 30-40% of the budget if it’s your only skatepark in town. If you do utilize these features, consider designing obstacles into them (coping, lips & things to grind where appropriate). Avoid asphalt pump tracks; they can be (or quickly become) inaccessible to skatepark users with small wheels.

TRANSITION RADIUS
Ramps with curved inclines (quarter pipes as opposed to banks) are defined by their “transition radius.” This has to do with how quickly the ramp gets steep relative to the height of the ramp. More technically, the radius is defined by the length of the radius of the ramp’s curve once it meets “vert” or a vertical angle, if given the height to do so. See Appendix E - Measuring Transition to learn more. Most skatepark designers and builders will know what transition to put where, to make sure the park is both accessible and challenging. Only experienced skatepark builders will be able to build a smooth and consistent concrete transition. A concrete skatepark transition wall (corner or flat wall) has to be steel trowel smooth, with no kinks or deviations, both laterally and going up the transition vertically. This type of construction is a specialty trade skill that is part artistry and part structural engineering. Level to a tolerance of “¼”-“½” inch in 10 feet. See Appendix A - Construction - Material Specifics and Tolerances and Appendix I - Bid Specification Suggestions at the end of this document.
SKATEPARK DESIGN

TIGHT VS MELLOW TRANSITION
Some examples of a tight transition and a mellow transition are shown below - both on a small ramp. Note that the tight transition is good for locking in smith grinds, but not so good for beginners. A mellow transition is better for learning as a beginner, but not so good for smiths. Mellow ramps can be used to learn complex tricks as an advanced skater, but it shouldn't be the only type of transition in the park. Work with your designer accordingly.

![Mellow Transition](image1)
![Tight Transition](image2)

PRECAST CONCRETE VS POURED IN PLACE
Precast concrete ramps are created off site in molds and shipped to the skatepark. While this might seem like a decent option for budget strapped skatepark projects, it’s usually advised against due to the risks. Concrete poured in another climate, shipping and installation damage, design restrictions, and installing precast skatepark elements in a way that makes them properly blend into each other (and the ground) are the common worries around this type of construction. It’s usually better to go with the standard poured in place/cast in place method to ensure long term durability, design flexibility and seamless execution.

UNIQUE FEATURES AND SKATEABLE ART
Function over form, but play with form. Utilize very experienced designer/builder support to ensure functionality. Create connections with the local art institutions to support these initiatives. They can be standalone, incorporated into a larger park design, or the entire design scheme.
DESIGN FOR INCLEMENT WEATHER

If you’re in an area that has a decent amount of regular inclement weather, it may be worth considering ways to ensure the skatepark is as usable as possible throughout the year. If you build a million dollar skatepark, but it rains or snows 25% of the year, you’re losing a quarter of those use hours. That means you’re only getting $750,000 of return on your investment, and locals don’t have access to their beloved recreation and social connection for that period of time. Ultimately you’ll want to decide on this early so you can factor in the decision and cost before it’s too late. So why not just put the skatepark indoors?

VISIBILITY IS KEY

In order to keep city liability, insurance costs and restrictions to access (fees, pads, waivers) at a minimum, skateparks must be unsupervised. It’s difficult to put a bunch of people (especially youth) in a closed, indoor space without supervision and not expect issues. If you supervise that space, it likely changes the liability designation for the city, which in turn changes insurance requirements, which in turn changes access requirements (fees, pads, waivers, etc.) All of this means greater costs for the city and the user, creating an economic displacement of the user base, resulting in fewer participants and what appears to be an unsuccessful skatepark.

SOLUTIONS:

As long as the necessary site selection criteria is met (visible, centralized, accessible, etc), there are options that might work to cover all or some of the skatepark. You don’t always have to cover all of the skatepark, so work with your designer to see what elements can be built in a specific section under a cover, so there’s always some access to the skatepark. Researching annual weather patterns may help you decide how much cover your community might need. You can also consider using ice skating rink plexi-glass panels to create see through walls in cases of consistent extreme weather.

UNDER A BRIDGE/ SEMICOVERED

PROS
- Cheap, existing infrastructure

CONS
- Additional stakeholder red tape (Department of Transportation), access and design constraints with support pillars

BUILDING A COVER

PROS
- Customizable

CONS
- Costs money, design constraints with support pillars

Note: Historically, many communities have been physically, economically and socially divided by highways. Skateparks can be a way to bridge the gaps between these groups and promote regional healing.

LOOKING FORWARD:

If a community is willing to foot the bill for an indoor space that doesn’t place any access restrictions on the user (fees, waivers, unnecessary safety gear requirements) and commits to a long term (multi-decade) operation of the space, that may be a viable solution. But this means long term funding for not only the skatepark itself, but added insurance, staffing, utilities, repairs and more. Skateparks should not be used as a part of a revenue model. You risk establishing a valuable community space then displacing all of those users when it doesn’t work out as an economic engine.
SUPPORT FROM THE SKATEPARK PROJECT

Founded by Tony Hawk, The Skatepark Project (TSP) is a nonprofit organization working to increase access to outdoor recreation and free play through the creation of safe and inclusive community skateparks. TSP provides the resources, advocacy skills, grants and fellowship programs that guide skaters in creating their own community skateparks, from conception through construction. This is a collaborative process between skaters and city authorities to invest in capital improvements that will enrich a community for decades. The Skatepark Project’s grant programs have awarded over $10 million to help fund nearly 700 public skateparks in all 50 states, enjoyed by an estimated six million people annually. The organization’s International Program has provided technical and financial support to assist youth through the Skateistan educational programs in Afghanistan, Cambodia, and South Africa. To get involved, visit www.skatepark.org

FREE SUPPORT
TECHNICAL ASSISTANCE, WORKSHOPS & PROGRAMS

OTHER DOWNLOADS FROM TSP
MOBILE APP
INSTRUCTIONAL VIDEOS
SIGNATURE ELEMENTS
DIY CDS
GREEN SKATEPARKS
SUPPORT FROM SKATEISTAN AND GOOD PUSH
GOODPUSH TOOLKIT

PUBLIC SKATEPARK DEVELOPMENT GUIDE V2

THE SKATESPACE PODCAST

GRANT FUNDING
Over 600 granted parks open in the United States.
LEARN MORE

FEEDBACK SURVEY

FIND MORE AT SKATEPARK.ORG
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