

Chapter

29

Skateparks and Winter Sports Areas

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In the new millennium, there continues to be a skateboarding renaissance. Facility development, equipment quality, skateboarders' techniques and abilities, and participant attitudes and maturity levels have all reached new peaks. High-performance facilities and equipment for every style of skating are available. The abilities of professional skaters visibly advance each month, seeing athletes (yes, athletes) literally reaching new heights. Skaters have become less clique-oriented and more open-minded. All disciplines of skating are now respected.

These changes have made skating more accessible to many different people of varying ages. Presently, there are over 10 million skaters in the United States, making it the sixth largest sport (National Inline Hockey Association [NIHA], 2000). Skateboarding has become the third most popular

sport among 6- to 18-year-olds (International Association of Skateboard Companies [IASC], 2001). Further, 1 in 10 U.S. teenagers owns a skateboard (IASC, 2001).

The popularity that skateboarding now enjoys is also reflected in the media. Skateboarding is regularly featured on major TV networks such as Fox, MTV, TSN, OLN, ESPN's notorious Extreme-Games (X-Games), and NBC's Gravity Games, thus bringing it into today's spotlight. Finally, this coverage, along with skating's appearance in marketing campaigns for Nike, The Gap, The National Fluid Milk Processor Promotion Board, Coca-Cola, and Nintendo has seen skateboarding appear on billboards, in magazines, and on television. All this exposure has greatly expanded public acceptance of skaters and skating.

Learning Objectives

After reading this chapter, the student should be able to

- develop a plan for a safe skateboard park, and
- design a safe sledding area.

Skateparks

History of Skateboarding

In the 1950s, surfers created skateboarding in order to pass the time when the ocean was flat. Roller-skate mounts and wheels were innocently nailed to 2x4s. This was the birth of the "sidewalk surfer." The earlier skateboard parks in the '50s and '60s reflected the surfer's passion for fluid, wavelike forms, and smooth sensations.

In 1970, the urethane wheel was applied to the skateboard. Skateboard-specific trucks appeared in 1973, which were followed by precision bearings in 1975. Being of higher performance than their predecessors, these new products allowed for an easier, more enjoyable ride. These improvements encouraged advancements in maneuvers and more challenging facilities and spawned a skateboarding boom that supported massive private skateboard parks across the United States and in Europe. The parks perfected the backyard pools, drainage pipes, and ditches that skaters had taken to riding. However, the demand for parks encouraged the development of poorly designed and constructed parks. This opened the door to insurance and liability problems. As a result, 80% of these parks were bulldozed in 1979, with the rest closing soon afterward. Some public parks remained, but basically skaters were left with nowhere to go, and many simply quit.

Yet during the '80s, the remaining dedicated and innovated skaters continued to push the value of the sport. Many changes took place in the design of facilities and equipment. The wooden backyard half pipe ramps began their evolution, which led to today's modern half pipes.

Presently, there is a resurgence in building skateboard parks. This has occurred because of the demand to remove skaters from city streets and public spaces. Skaters took to the streets because most of the skateparks had closed during the '80s, and they developed the "streetstyle" of skating creatively, adapting moves done in a pool or ramp in the defunct

parks of the '70s to curbs, ledges, steps, handrails, and walls. Communities became concerned about the skaters, and some considered them rebellious and a public nuisance.

Skateparks have come a long way from the early, unsafe private parks to the well-designed safe public parks of today. The new facilities are larger and safer, and the skaters are using better designed equipment and safety gear. Skateboarding is fast becoming a very safe and exciting sport for young (ages 6 to 18) males (74%) to spend their spare time perfecting their skills.

Liability

Liability is always a question when dealing with sports in general. Therefore, it is paramount that owners (public or private) carefully plan for a safe facility for participants and spectators. Today most insurance companies do not view skateparks as a high risk for governmental agencies. They are no more dangerous than swings and slides. Yet it is advisable to make sure the facility is covered with the same blanket plan as the city or town. (See Figure 29.1 for a listing of insurance carriers)

Figure 29.1
Insurance Carriers

K&K Insurance Company 310-473-2522	Joint Powers of Insurance Agency 562-467-8720
Gelfand Newman Wasserman General Liability, Participant, and Event Insurance 310-473-2522	Association of Bay Area Governments, Pooled Liability Assurance Network 510-464-7900
City Securities Corporation 800-800-2489	Association of Washington Cities, Risk Management Service Agency 360-753-4137
International Special Events and Recreation Association 801-321-1493	

It is further advisable that the agency seriously consider safety when planning the skatepark. Signs should be posted to indicate hours of operations, pad and helmet requirements, and that the park is used at the participant's risk. The public agency needs to also consider the level of supervision that it should provide. Current common practice with skateparks is to leave the park open to "free play" with no supervision (i.e., similar to playgrounds). This practice will decrease the agency's liability. However, the operator must be certain that the area is safe, free of hazards, inspected regularly, and well maintained (i.e., similar to swimming pools at motels/hotels, where legislation protects those who have proper and adequate signage, a fence around the pool, safety equipment available, and the pool is maintained regularly).

The passage of numerous pieces of state legislation has allowed local public agencies to build unsupervised skateparks and post signs requiring safety equipment to be worn while skating. Unsupervised skateparks are very popular with skaters, but care has to be taken to build them in safe locations. If you do not have an ideal location, you may want to consider supervising the park or partnering with a private skatepark or other youth group, such as a church, Boys and Girls Club, or YMCA.

Immunity for Extreme Sports Parks

The Indiana General Assembly provided in Senate Bill 0141 (2001) that public and private owners and operators of extreme sports parks or recreation areas are immune from civil damages for injuries caused by extreme sports if 1) the extreme sports park or recreation area is designed or maintained for the purpose of extreme sports use, 2) a set of rules governing the use of the facility is clearly posted at each entrance to the extreme sports park or recreation area, and 3) a warning concerning the hazards and dangers associated with the use of the facility is clearly posted at the entrance to the extreme sports park or recreation areas; and they are immune from civil damages for injuries if the extreme sports park or recreation area is closed and has a warning against entry posted at each entrance. Other states have similar statutes and it is important for planners to pay attention to the three provisions outlined above when planning a skate park.

Safety Statistics

In 1968, the U.S. Consumer Product Safety Commission (CPSC) ranked sports and recreation equipment on a mean severity index that ranged from 10 to 2,516 (10 being the least severe). Swimming pools were given 335, bicycles 70, and skateboarding 34. There have been three deaths involving skateboarders in the United States since 1970 and these incidents involved motor vehicles. Table 29.1 provides the results of a recent survey conducted by the United States National Electronic Injury Surveillance System.

Notes

Table 29.1
Percentage of Injuries in Common Sports

Sport	Participants	Injuries	% of Injuries
Ice hockey	1,700,000	61,264	3.60
Football	14,700,000	409,206	2.78
Basketball	29,600,000	761,358	2.57
Soccer	10,300,000	146,000	1.42
Baseball	36,600,000	437,207	1.26
Volleyball	20,500,000	112,120	0.54
Skateboarding	6,200,000	27,718	0.49

Of those injured, 33 % had been skating less than one week, 20 % were people borrowing boards, and 95% received outpatient care. Most noteworthy is that 50% of the accidents occurred in unsafe areas where the skater struck an irregularity in the riding surface. Therefore, by providing and maintaining a professionally designed skate park instead of leaving these kids in the street, the above numbers would likely dramatically decrease.

General Planning Criteria

There are many sources of information on skateboard techniques and design of bowls, ramps, and other ancillary facilities. The following information is general in nature and provides the planners a place to begin this type of project.

Location

The planners should evaluate potential sites by considering the following issues: 1) potential usage of area (i.e., demographic analysis and a needs assessment), 2) size of site (i.e., how big is big enough), 3) access to public transportation, 4) drainage for the site, 5) access to public utilities, 6) noise pollution, 7) nuisance avoidance, 8) spectator seating, 9) parking, and 10) emergency access.

Safety

The following design features address safety issues that need to be considered by planners: 1) safe spectator areas, 2) low-maintenance site, 3) adequate sight lines of the area for supervision as well as viewing activities by spectators, 4) protective netting or barriers to guard against serious falls and to impede flying skateboards, 5) safety lighting, 6) emergency access, 7) exposure to environmental elements such as wind, rain, lightning, or sun, 8) shaded areas, and 9) drinking fountains.

Other Considerations

The following are a few additional considerations for planners to think about in the design of the skatepark: 1) adequate lighting for night activities, 2) facilities for skateboarding are suitable for other disciplines such as in-line skating or roller blading (e.g., recreational speed skating, in-line hockey, and freestyle or aggressive skating) and BMX bikes, 3) noise and light intrusion on neighbors, and 4) north or south orientation rather than an east or west setting.

Consulting Services

The services that are normally provided by consultants (i.e., architect, landscape architect, skaters, and safety experts) in this area include

- preparing a demographic survey of the local skate community,
- assisting in the site selection,
- determining designs and construction parameters (e.g., wood vs. concrete, size, budget [see Figure 29.2 for costs associated with the various types of parks], amenities),
- acting as an intermediary between owners and local skaters,
- organizing and establishing a pro shop (e.g., contacting vendors, preparing initial orders, etc.),
- preparing drawings for public venues, and
- developing design specifications for either wood or concrete skateparks.

Design Services

Skateparks are designed of either concrete, steel, or wood. The designs are unique and customized to the specific site, wishes of the local skaters, and the needs of the owners. The park should be designed to provide the skaters with a fun and safe place to skate. Skateparks should include elements for all levels of skating ability, from beginner to advanced with sufficient variety to challenge and keep them coming back for more. Elements are designed with the proper transitions and heights, and the layouts allow flow from one element to the next.

Figure 29.2
General Information on Skatepark Costs

Portable parks and wood parks—as little as \$3,000 and up to \$100,000 with the average park being 10,000 square feet and costing around \$25,000; require regular maintenance; surfaces may be masonite, plywood, birch, skatelite, or skatelite pro.

Advantages—portable, movable, affordable.

Steel frame skateparks—steel frame with metal or skatelite surfaces; permanent parks; can be bolted to existing concrete pad; some maintenance; more expensive than wood, with a 10,000 square foot park starting at around \$30,000.

Advantages—park can be reconfigured, weatherproof, affordable.

Concrete parks—concrete starting as low as \$10 per square foot, averages \$16 per square foot and can be as high as \$20 per square foot depending on excavation, grading, drainage, irrigation, water table, and so on; average 10,000 square foot park costs \$140,000, you must work with qualified builders and designers and make sure the concrete crew is experienced with mistakes made in concrete which are expensive and permanent and are happening too often, two bowls (\$132,000) were built and the concrete crew brushed the finish making them unskateable.

Advantage—no maintenance, permanent park.

The designer of a skatepark should thoroughly understand skatepark design, site preparation (e.g., surveying, soil testing, etc.), and structural engineering (see Appendix AA for listing of builders, consultants, and designers). The designer selected should be able to provide the following services:

- Conducting preliminary consulting services appropriate to design considerations.
- Preparing custom concept designs for wood, concrete, or combination of the two.
- Developing detailed construction drawings for wood skateparks.
- Preparing detailed drawings for concrete parks.
- Providing budget estimates (see Appendix DD).
- Preparing detailed specifications for wood park construction.
- Consulting with concrete and steel contractors on design elements.
- Producing drawings in various formats using the latest version of AutoCad (see Figure 29.3 for samples of skatepark designs from <http://www.skatedesign.com>).

Specific Design Features

Wood Ramp Construction

Wood ramps can withstand many years of abuse by both skaters and the weather. The critical factors are that wood ramps are designed properly, built by experienced carpenters, and constructed of the right materials. The advantages of wood parks are that they are relatively inexpensive, easily built, and can be placed on an existing concrete or asphalt pad. In addition, most wood equipment can be moved to change the configuration of the park to create new challenges for the skaters to enjoy. (See Figures 29.4 and 29.5 for types of ramps)

Generally, specifications for outdoor wood parks include
(see also <http://www.suburbanrails.com>)

- All wood should be pressured treated.
- 3/4 plywood transition templates, on ends and every 4 feet or 6 feet.
- 2-inch x 6-inch joists, spaced 8 inches on center, 4-foot spans/double joists every 24 inches.
- Two layers of 1/2 plywood subsurface.



Photo by Michael Hypes

Various ramps at the YMCA skate park in Murfreesboro, Tennessee.

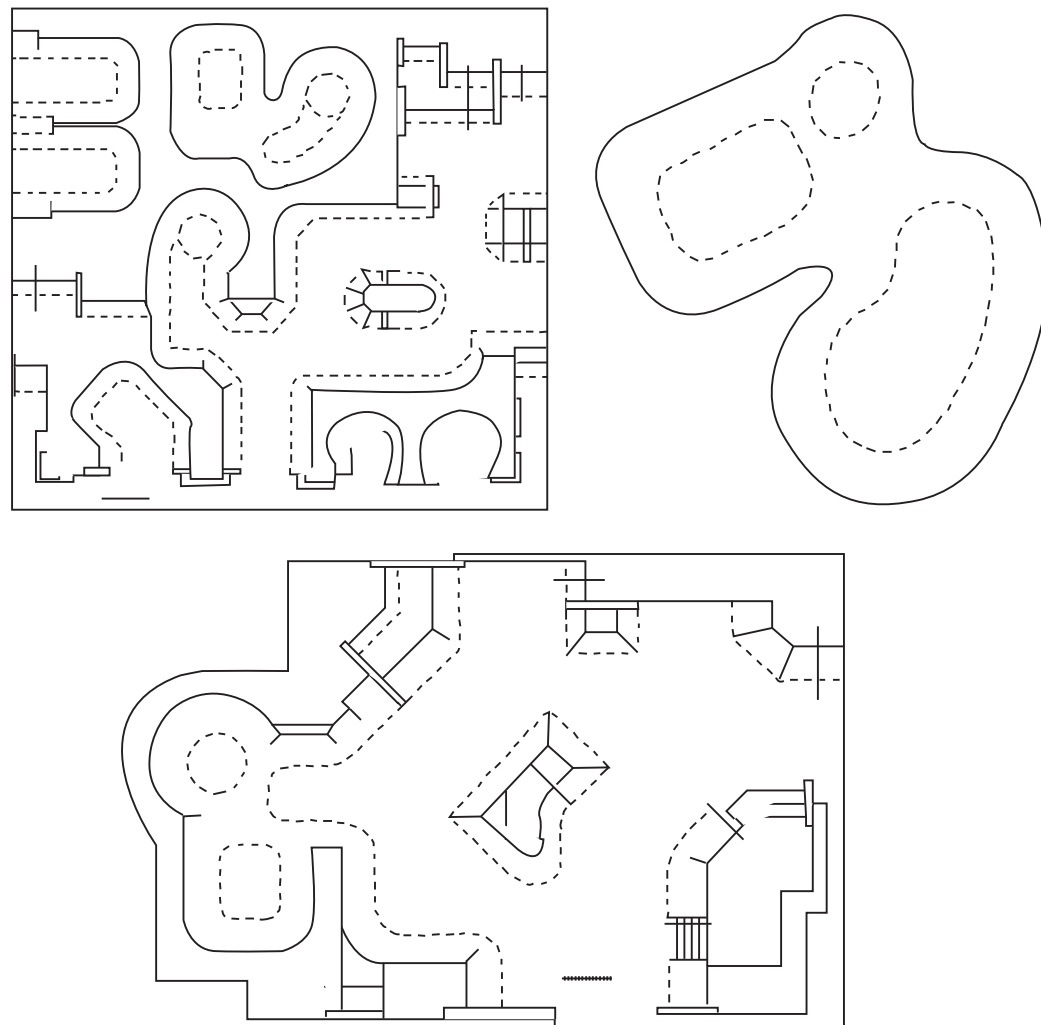
Notes

- 3/8 polyboard, 1/4 Skatelite, or 12-gauge steel ramp surface.
- 12-gauge by 24-inch steel for all ramp bottoms.
- 1/4 Polyboard on ramp decks.
- Coping, 1 1/2 or 2-inch schedule 40 pipe (2 or 2 1/2-inch OD).
- Ramp joists fastened with #8 by 3-inch galvanized deck screws.
- Each layer of plywood is fastened by rust-proof decking screws on a 12-inch pattern.
- Ramp surfaces and bottoms fastened with #10 by 3-inch sheet metal screws.



Photo by Michael Hypes

Figure 29.3
Skatepark Design



Figures 29.4 and 29.5 provide a few examples of ramps. They can be built with varying heights and widths. This list is far from comprehensive.

Concrete Skateparks

Permanent outdoor skateparks are constructed of concrete. The material is fluid and allows unlimited shapes to be integrated into the design. Objects can flow from one to another with no interruptions. Long, flowing designs that incorporate soft bumps as well as curbs, ledges, rails, and steps can be easily built to make interesting and challenging runs for skaters of all experience levels. If the owner has the budget, this is the way to go.

Figure 29.4
Sample Ramps

Notes

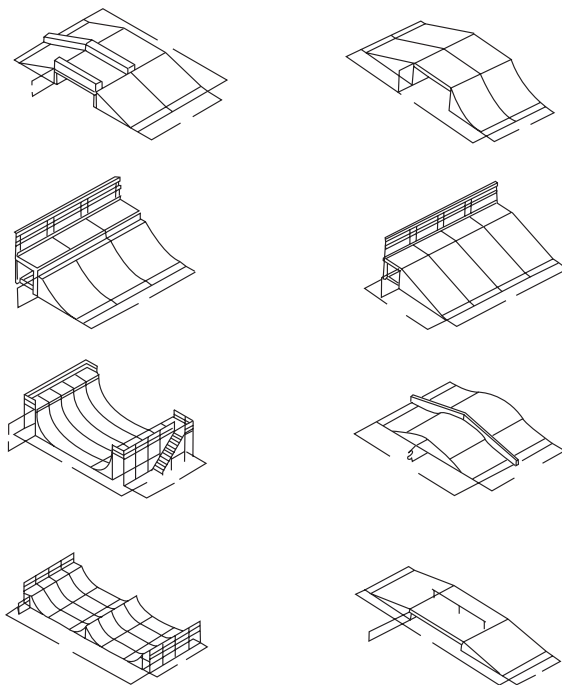
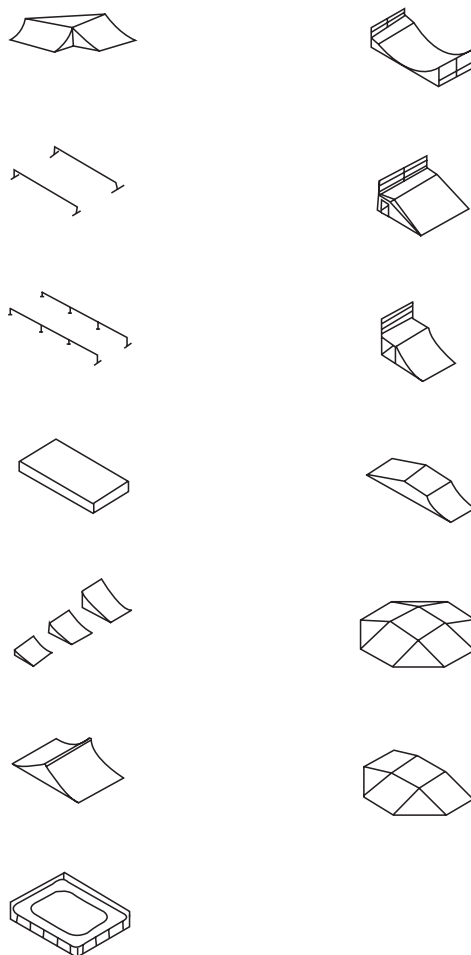


Figure 29.5
Sample Ramps



Notes

Concrete parks are built from the ground up. This allows for a more aesthetically pleasing park by incorporating varying elevations and by integrating grassy knolls, shade trees, flowers, and observation areas. Critical factors in concrete parks are the design and implementation of the transitions and placement of the coping. If a concrete park is poorly designed or built, the owner could be stuck with an area skaters will not skate.

Perfectly installed coping and forms act as guides for templates. The templates then guide a blade, called a fresno, which precisely cuts the concrete to shape. The template is then moved to the end of the trimmed section and the process is repeated. The concrete used is called shotcrete, which is also used for swimming pools.

A grey coat is recommended for bowls, pools, or anything with transition. Working steeply inclined concrete with floats and trowels makes the concrete slump and compresses the transition, forming a kink. Cutting the concrete, then putting a finish coat on later, allows more control to achieve a precise shape and smoother finish.



Photos by Michael Hypes

BMX bike on the YMCA skatepark in Murfreesboro, Tennessee.



Photo by Tom Sawyer

Concrete Skatepark in Green Castle, Indiana (above and below).



Photo by Tom Sawyer

limbs and leaves that could be a safety problem for the park. (See Chapter 19 for additional information regarding foliage, trees, and turf)

Other maintenance issues focus on cleaning restrooms, concession areas, offices, entrance and lobby areas, and the pro shop within the skate house. Further, exterior trash containers need to be regularly emptied and cleaned. Finally, the grass areas need to be mowed.

Lighting

Most outdoor skateparks require lighting. Chapter 15 provides a great deal of detail regarding exterior lighting. Lighting for the park serves two main functions: to provide light for night skateboarding and for security when the park is not in use.

Indoor Skateboard Park

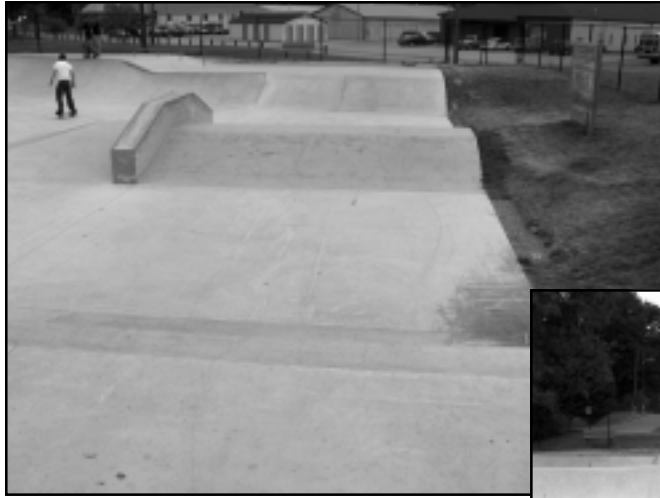
There are many locations in the United States that have a combined indoor/outdoor park because of climate. The actual design of the park will be the same except it will be indoors rather than out. The other components of an indoor structure such as heating, ventilation, air-conditioning, plumbing, electrical, and so on, are found in other chapters of this book.

Maintenance

Skateparks are generally constructed of concrete and repairs are rarely needed. Those that have steel and wooden structures will require regular inspection and maintenance. The facilities are kept clean by the skateboarders themselves. They do not want to trip on soda cans or other rubbish.

A major maintenance concern with steel is rust and loose bolts and screws. The wooden ramps also have problems with screws loosening and falling out. Weather can take a toll on both steel and wooden ramps. The major concerns with concrete are cracks and pooling water areas. The cracks need to be properly filled prior to winter. Frost can be very destructive to concrete.

Trees and other foliage enhance the visual beauty and provide shade for a park. However, trees require regular maintenance to keep them healthy. Areas around trees require regular cleaning to remove discarded



**Concrete Skatepark in
Green Castle, Indiana
(left and below).**

Photo by Tom Sawyer



Photo by Tom Sawyer

Winter Sports Areas

Sledding Areas

According to data provided by the CPSC, there were 115,000 emergency visits each year because of ski accidents but only 2.5% (3,750) are for head injuries. Sledding accidents account for 55,000 emergency room visits. Of those, 15% (8,250) are head injuries (CPSC, 2001). Most sledding accidents occur at a low speed between 10 and 20 mph.

Sledding Safety

Sledding is a great activity but results in many accidents each year, some of which are very serious and even fatal. The following safety recommendation should be considered when developing sledding areas:

- Avoid hills with trees, stumps, holes, fences, and rock walls.
- *Never* orient a sledding course toward a road, parking lot, pond, lake, river, railroad tracks, or raven.
- Allow for a sled return zone adjacent to the sledding course.
- Have all participants wear a helmet and mouth guard.
- Provide adult supervision.
- Pad all obstructions with hay bales.
- Use sleds that can be steered rather than snow discs.
- Do not allow participants to ride flat. Have the participants sit up and face forward.
- All participants should sled feet first, never head first.
- Do not allow inflatable tube sleds, they can bounce and throw children.
- Do not allow sitting or sliding on plastic sheets or other materials that can be pierced by objects on the ground.
- Be certain that the sledding area is well lighted during the evening hours.
- Post appropriate signage to warn participants of dangers of sledding and the do's of good sledding.

Designing a Safe Sledding Area

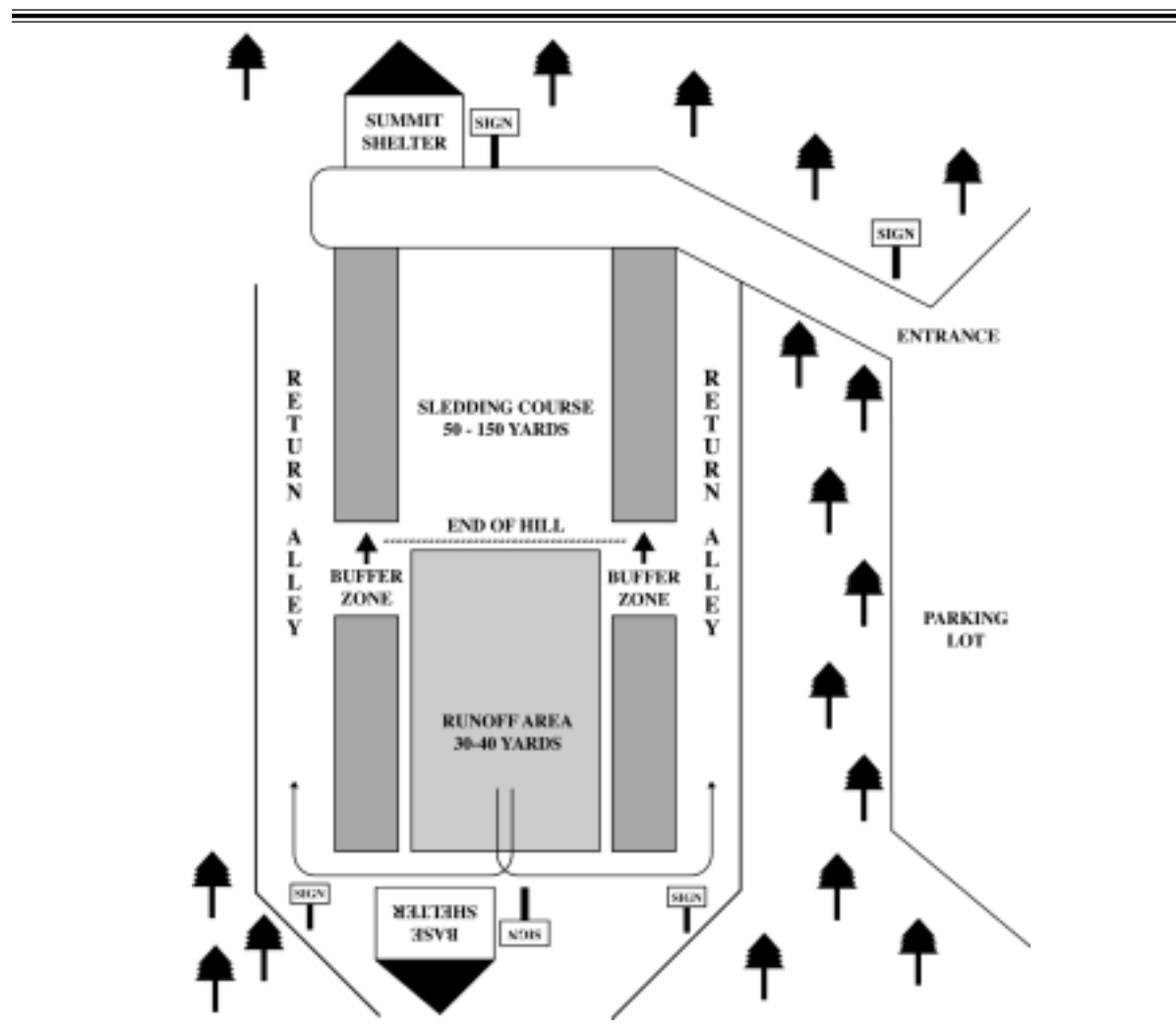
It is important to take into consideration the points made above when designing a safe sledding area for children. Sledding is a natural winter activity, and communities need to provide for safe sledding areas to protect the children.

A safe sledding area should include the following (see Figure 29.6):

- An entrance to the area.
- A wide, moderately sloped hill clear of stumps, trees, fences, and holes.
- The length should be between 50 to 150 yards.
- The runoff should be long and flat to accommodate deceleration of the sled.

Notes

Figure 29.6
Sledding Course Design



- The sledding course should be clearly marked.
- The return alleys for the sledders should be clearly identified on either side of the sledding course.
- There should be a buffer/safety zone of at least 10 yards between the sledding course and return alleys.
- The end of the course should not be compromised by roads, ponds, lakes, rivers, or parking lots.
- All obstructions must be padded by hay or straw bales.
- Lighting should be provided if the area is to be used in the evening hours.
- A shelter should be provided at the top and bottom of the course for sledders to use during resting periods with restrooms nearby.
- There should be appropriate signage placed at the entrance and shelters outlining the safety recommendations for sledders.

Snow Sports

Ski and Snowboard Hills

Skiing has become very popular. If climatic conditions are suitable and desirable topographic features are available, a school or a park and recreation department might look into the possibility of developing the facilities needed to foster this sport. A variety of artificial surfaces simulating real snow has brought skiing instructional opportunities to all sections of the country independent of climate.

The provision of skiing in a school or public recreation system should be approached from an instructional standpoint, the theory being to give participants some basic instruction so they can enjoy it as a leisure-time activity in the resort areas that have more ideal facilities. If the park system contains ideal skiing hills with plenty of room, regular ski courses may be developed. Some of the basic facilities required for skiing instruction include proper topographical features; a headquarters building for rental of equipment, a refractory, and similar purposes; a ski tow; and various slopes for instructional purposes.

Normally, the series of classes is broken into three units—beginners, advanced, and expert. It is the opinion of ski instructors that the beginners' ski class is by far the most important for recreation skiing. Basic instruction in skiing may be conducted in classes not exceeding 25 to 30 beginners. For this group,

a gentle and short slope with a relatively large flat, run-out area is desirable because it permits a beginner to have complete control of him- or herself and allows him to gain confidence in the use of his skis. In the advanced group, classes are much smaller, and in the expert group, instruction becomes almost individualized. For each successive group, hills become longer and a little steeper.

The following criteria are recommended for the selection of facilities for beginners' classes:

- Flat-top hill area, 50 square feet per skier, 25 skiers per class.
- Slope about 75 to 100 feet long, drop in grade of 15 feet, or 4:1 ratio.
- Starting line at top of slope, 100 feet wide.
- Run-out at bottom of slope either flat or uphill.
- Slope facing east or northeast.
- Instructional area free of stones, woods, and other impediments.
- Protective cover, such as trees or brush, around the area.

The following criteria are suggested for advanced classes:

- Top of hill about the same as for beginners.
- Slope is most important: ratio about 3:1 and length 100 to 150 feet.
- Width of hill or slope, minimum of 150 feet because of speed and space required for turning movements.

The following criteria are recommended for the selection of facilities for expert classes:

- Either the same hill as advanced classes or, preferably, a longer and steeper hill.
- Enough downhill length to permit a minimum of three turning movements—for example, 250 feet on a 3:1 slope.
- Greater width than that of slope for advanced classes.

Cross-Country Skiing

Cross-country skiing has a broad popularity across the northern United States. Cross-country skiing, also known as ski touring, has attracted many people who cannot afford to keep up with "alpine" or "downhill" skiing price tags or do not want to stand in long lines at the lifts.

One of the attractive features of cross-country skiing is that a successful program can be developed with limited facilities. Existing trails can be groomed in the winter using homemade or purchased equipment that is towed by a snowmobile. Trail surfaces are best on a wood chip, grass, or gravel base. Asphalt bases do not work well. Trails can be carved out of almost any park area. If a golf course is used, the greens and tees should have a fence placed around them to keep skiers off of these sensitive areas. Trails should be signed with rules placed at starting points. The signs should indicate direction, distance, and level of difficulty.

Coasting and Tobogganing

Often a community has a hill or hills suitable for coasting, which become meccas after every snowfall for children with sleds, toboggans, and other coasting devices. In the absence of a natural coasting hill, some park and public works departments have built such a facility. These hills are usually located in a park safely guarded from the hazards of street traffic.

In developing local sledding (coasting) areas, care should be taken to incorporate adequate safety features. Sufficient space should be provided between sled runs and up traffic should be isolated from the down traffic. The area should be as free as possible from hazards, such as nearby trees, grills, benches, or other park paraphernalia. Municipal risk managers will provide input into the safety of the area.

Communities with an extensive response to sledding or skiing may want to counter adverse weather with the use of artificial snow equipment or improve the activity with a ski lift. Communities where there are not available hills have created their own sledding hills. They typically serve as a sledding hill in the winter and as part of a park in the spring and summer where multiple activities can be programmed.

Tobogganing is a thrilling sport that requires designed space. Occasionally, natural slopes are used if they are free from obstructions and have a long bottom run-off. The common practice is to select a hillside with a reasonable steep and even grade. A chute is constructed using a wooden trough. It can be permanent or built in sections. Some communities have created artificial toboggan runs with refrigerated chutes. They are expensive to develop and maintain.

Ice Skating

Ice skating facilities are feeling the impact of modern technology in more and more communities each year. With the advent of mechanical freezing, the skating season has been extended from a 20- to 60-day average season to a 140-day season and, depending on climatic conditions, to as much as 240 days.

While natural ice rinks have not gone out of style, artificial rinks are replacing them as central or regional facilities. Natural ice rinks are continuing to serve as a supplemental neighborhood facility in many communities. A considerable number of skaters still prefer the rugged pleasure of an old-fashioned skating experience.

Notes

Ice Hockey

Ice rinks may have a sports function as well as providing a recreation service. If ice hockey is to be part of the rink's activity schedule, goals will be needed and a 4-foot-high solid fence, called the dasher, will have to be installed to enclose an area as near to 85 by 185 feet as possible. Dasher boards are heavily reinforced to stand the shock of players being pushed against them and are lined on the rink side with either wood or plastic. There is normally a chain link or clear plastic barrier another 4 to 6 feet on top of the dashers to enable spectators to view games safely. The dasher board enclosure should have round corners, because square corners present a hazard. A kickboard, six to eight inches high, is fastened at the base of the dasher boards and is replaced as often as necessary.

Because dasher boards reflect sunlight and cause melting of the ice, they should be painted a dark color. However, it is difficult to follow the puck if the dasher boards are too dark, so a shade of gray is recommended. If the hockey rink is indoors, the dasher boards can be painted a light color without causing a melting problem.

Summary

In less than 50 years, skateboarding has become a large sporting industry. It started as a relief to boredom for surfers and has grown into a national pastime for thousands of young men and women ages 6 to 18.

Sledding is a natural winter fun activity but it is also dangerous if a few precautions are not taken. Municipalities and nonprofit organizations (e.g., Boys and Girls Club, YMCA, or YWCA) should consider developing a safe sledding area to protect the children of the community from sledding injuries. A safe sledding area can be a fun time for all if it is planned with safety in mind.

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