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1. Googles mobile-first indexing
2. SEO-friendly URLs

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Landscape maintenance Las Vegas - Search engine optimization

1. Keyword research
2. Search engine optimization
3. Keyword research frameworks

landscape improvement Las Vegas

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Landscape maintenance Las Vegas - Keyword research

1. Keyword cannibalization checks
2. SEO keywords
3. Meta tags optimization

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About Artificial turf

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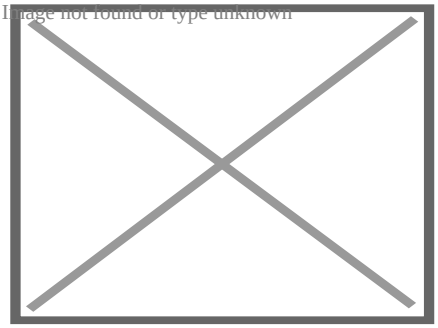
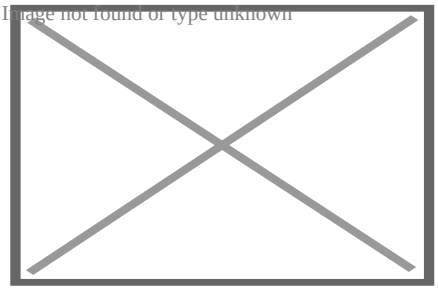

Artificial turf with rubber crumb infill


Side view of artificial turf

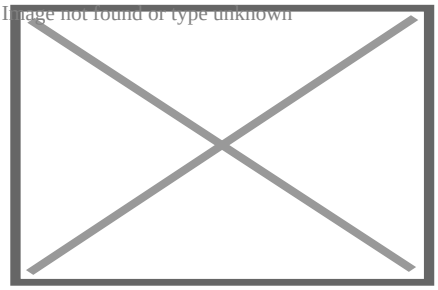
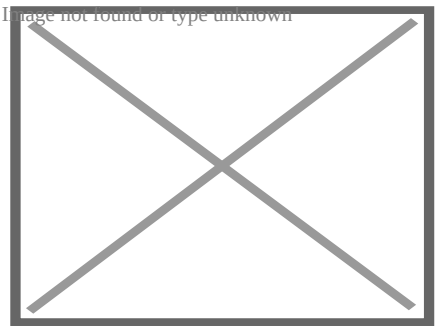


Diagram of the structure of modern artificial turf


Artificial turf square mats

Artificial turf is a surface of synthetic fibers made to look like natural grass, used in sports arenas, residential lawns and commercial applications that traditionally use grass. It is much more durable than grass and easily maintained without irrigation or trimming, although periodic cleaning is required. Stadiums that are substantially covered and/or at high latitudes often use artificial turf, as they typically lack enough sunlight for photosynthesis and substitutes for solar radiation are prohibitively expensive and energy-intensive. Disadvantages include increased risk of injury especially when used in athletic competition, as well as health and environmental concerns about the petroleum and toxic chemicals used in its manufacture.

Artificial turf first gained substantial attention in 1966, when ChemGrass was installed in the year-old Astrodome, developed by Monsanto and rebranded as AstroTurf, now a generic trademark (registered to a new owner) for any artificial turf.

The first-generation system of shortpile fibers without infill of the 1960s has largely been replaced by two more. The second features longer fibers and sand infill and the third adds recycled crumb rubber to the sand. Compared to earlier systems, modern artificial turf more closely resembles grass in appearance and is also considered safer for athletic competition. However, it is still not widely considered to be equal to grass. Sports clubs, leagues, unions and individual athletes have frequently spoken out and campaigned against it, while local governments have enacted and enforced laws restricting and/or banning its use.

History

[edit]

David Chaney, who moved to Raleigh, North Carolina, in 1960 and later served as Dean of the North Carolina State University College of Textiles, headed the team of Research Triangle Park researchers who created the first notable artificial turf. That accomplishment led *Sports Illustrated* to declare Chaney as the man "responsible for indoor major league baseball and millions of welcome mats."

Artificial turf was first installed in 1964 on a recreation area at the Moses Brown School in Providence, Rhode Island.[1] The material came to public prominence in 1966, when AstroTurf was installed in the Astrodome in Houston, Texas.[1] The state-of-the-art indoor stadium had attempted to use natural grass during its initial season in 1965, but this failed miserably and the field conditions were grossly inadequate during the second half of the season, with the dead grass painted green. Due to a limited supply of the new artificial grass, only the infield was installed before the Houston Astros' home opener in April 1966; the outfield was installed in early summer during an extended Astros road trip and first used after the All-Star Break in July.

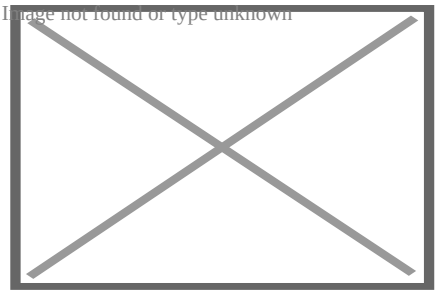
The use of AstroTurf and similar surfaces became widespread in the U.S. and Canada in the early 1970s, installed in both indoor and outdoor stadiums used for baseball and football. More than 11,000 artificial turf playing fields have been installed nationally.[2] More than 1,200 were installed in the U.S. in 2013 alone, according to the industry group the Synthetic Turf Council.[2]

Sports applications

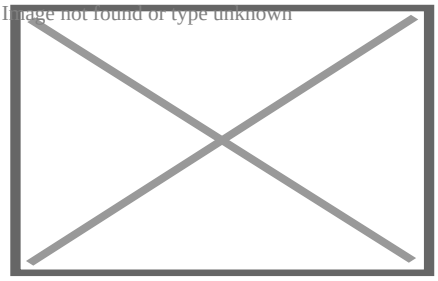
[edit]

Baseball

[edit]



Tropicana Field with its artificial turf field.



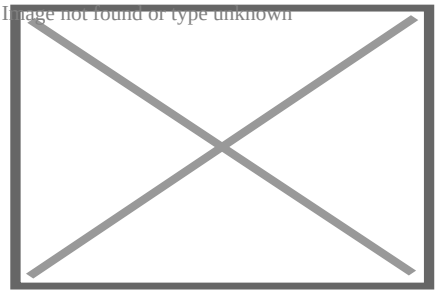
An artificial-turf field at a high school in Oregon.

Artificial turf was first used in Major League Baseball in the Houston Astrodome in 1966, replacing the grass field used when the stadium opened a year earlier. Even though the grass was specifically bred for indoor use, the dome's semi-transparent Lucite ceiling panels, which had been painted white to cut down on glare that bothered the players, did not pass enough sunlight to support the grass. For most of the 1965 season, the Astros played on green-painted dirt and dead grass.

The solution was to install a new type of artificial grass on the field, ChemGrass, which became known as AstroTurf. Given its early use, the term *astroturf* has since been genericized as a term for any artificial turf.[3] Because the supply of AstroTurf was still low, only a limited amount was available for the first home game. There was not enough for the entire outfield, but there was enough to cover the traditional grass portion of the infield. The outfield remained painted dirt until after the All-Star Break. The team was sent on an extended road trip before the break, and on 19 July 1966, the installation of the outfield portion of AstroTurf was completed.

The Chicago White Sox became the first team to install artificial turf in an outdoor stadium, as they used it only in the infield and adjacent foul territory at Comiskey Park from 1969 through

1975.[4] Artificial turf was later installed in other new multi-purpose stadiums such as Pittsburgh's Three Rivers Stadium, Philadelphia's Veterans Stadium, and Cincinnati's Riverfront Stadium. Early AstroTurf baseball fields used the traditional all-dirt path, but starting in 1970 with Cincinnati's Riverfront Stadium,[5] teams began using the "base cutout" layout on the diamond, with the only dirt being on the pitcher's mound, batter's circle, and in a five-sided diamond-shaped "sliding box" around each base. With this layout, a painted arc would indicate where the edge of the outfield grass would normally be, to assist fielders in positioning themselves properly. The last stadium in MLB to use this configuration was Rogers Centre in Toronto, when they switched to an all-dirt infield (but keeping the artificial turf) for the 2016 season.[6][7]



Artificial turf being installed on a baseball field in Queens, New York City.

The biggest difference in play on artificial turf was that the ball bounced higher than on real grass and also traveled faster, causing infielders to play farther back than they would normally so that they would have sufficient time to react. The ball also had a truer bounce than on grass so that on long throws fielders could deliberately bounce the ball in front of the player they were throwing to, with the certainty that it would travel in a straight line and not be deflected to the right or left. The biggest impact on the game of "turf", as it came to be called, was on the bodies of the players. The artificial surface, which was generally placed over a concrete base, had much less give to it than a traditional dirt and grass field did, which caused more wear-and-tear on knees, ankles, feet, and the lower back, possibly even shortening the careers of those players who played a significant portion of their games on artificial surfaces. Players also complained that the turf was much hotter than grass, sometimes causing the metal spikes to burn their feet or plastic ones to melt. These factors eventually provoked a number of stadiums, such as the Kansas City Royals' Kauffman Stadium, to switch from artificial turf back to natural grass.

In 2000, St. Petersburg's Tropicana Field became the first MLB field to use a third-generation artificial surface, FieldTurf. All other remaining artificial turf stadiums were either converted to third-generation surfaces or were replaced entirely by new natural grass stadiums. In a span of 13 years, between 1992 and 2005, the National League went from having half of its teams using artificial turf to all of them playing on natural grass. With the replacement of Minneapolis's Hubert H. Humphrey Metrodome by Target Field in 2010, only two MLB stadiums used artificial turf from 2010 through 2018: Tropicana Field and Toronto's Rogers Centre. This number grew to three when the Arizona Diamondbacks switched Chase Field to artificial turf for the 2019 season; the stadium had grass from its opening in 1998 until 2018, but the difficulty of maintaining the grass in the stadium, which has a retractable roof and is located in a desert city,

was cited as the reason for the switch.[8] In 2020, Miami's Marlins Park (now loanDepot Park) also switched to artificial turf for similar reasons, while the Texas Rangers' new Globe Life Field was opened with an artificial surface, as it is also a retractable roof ballpark in a hot weather city; this puts the number of teams using synthetic turf in MLB at five as of 2023.

American football

[edit]

The first professional American football team to play on artificial turf was the Houston Oilers, then part of the American Football League, who moved into the Astrodome in 1968, which had installed AstroTurf two years prior. In 1969, the University of Pennsylvania's Franklin Field in Philadelphia, at the time also home field of the Philadelphia Eagles, switched from grass to AstroTurf, making it the first National Football League stadium to use artificial turf.

In 2002, CenturyLink Field, originally planned to have a natural grass field, was instead surfaced with FieldTurf upon positive reaction from the Seattle Seahawks when they played on the surface at their temporary home of Husky Stadium during the 2000 and 2001 seasons. This would be the first of a leaguewide trend taking place over the next several seasons that would not only result in teams already using artificial surfaces for their fields switching to the new FieldTurf or other similar surfaces but would also see several teams playing on grass adopt a new surface. (The Indianapolis Colts' RCA Dome and the St. Louis Rams' Edward Jones Dome were the last two stadiums in the NFL to replace their first-generation AstroTurf surfaces for next-generation ones after the 2004 season). For example, after a three-year experiment with a natural surface, Giants Stadium went to FieldTurf for 2003, while M&T Bank Stadium added its own artificial surface the same year (it has since been removed and replaced with a natural surface, which the stadium had before installing the turf). Later examples include Paul Brown Stadium (now Paycor Stadium), which went from grass to turf in 2004; Gillette Stadium, which made the switch in 2006;[9] and NRG Stadium, which did so in 2015. As of 2021, 14 NFL fields out of 30 are artificial. NFL players overwhelmingly prefer natural grass over synthetic surfaces, according to a league survey conducted in 2010. When asked, "Which surface do you think is more likely to shorten your career?", 90% responded artificial turf.[10] When players were asked "Is the Turf versus Grass debate overblown or a real concern"[11] in an anonymous player survey, 83% believe it is a real concern while 12.3% believe it is overblown.

Following receiver Odell Beckham Jr.'s injury during Super Bowl LVI, other NFL players started calling for turf to be banned since the site of the game, SoFi Stadium, was a turf field.[12]

Arena football is played indoors on the older short-pile artificial turf.

Canadian football

[edit]

The first professional Canadian football stadium to use artificial turf was Empire Stadium in Vancouver, British Columbia, then home of the Canadian Football League's BC Lions, which installed 3M TartanTurf in 1970. Today, eight of the nine stadiums in the CFL currently use artificial turf, largely because of the harsh weather conditions in the latter-half of the season. The only one that does not is BMO Field in Toronto, which initially had an artificial pitch and has been shared by the CFL's Toronto Argonauts since 2016 (part of the endzones at that stadium are covered with artificial turf).[13] The first stadium to use the next-generation surface was Ottawa's Frank Clair Stadium (now TD Place Stadium), which the Ottawa Renegades used when they began play in 2002. The Saskatchewan Roughriders' Taylor Field was the only major professional sports venue in North America to use a second-generation artificial playing surface, Omniturf, which was used from 1988 to 2000, followed by AstroTurf from 2000 to 2007 and FieldTurf from 2007 to its 2016 closure.[14]

Cricket

[edit]

Some cricket pitches are made of synthetic grass[15] or of a hybrid of mostly natural and some artificial grass, with these "hybrid pitches" having been implemented across several parts of the United Kingdom[16] and Australia.[17] The first synthetic turf cricket field in the USA was opened in Fremont, California in 2016.[18]

Field hockey

[edit]
Further information: Field hockey history § The synthetic revolution

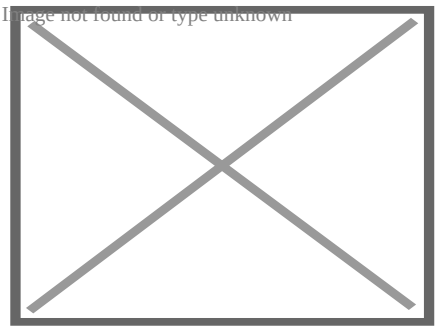
The introduction of synthetic surfaces has significantly changed the sport of field hockey. Since being introduced in the 1970s, competitions in western countries are now mostly played on artificial surfaces. This has increased the speed of the game considerably and changed the shape of hockey sticks to allow for different techniques, such as reverse stick trapping and hitting.

Field hockey artificial turf differs from artificial turf for other sports, in that it does not try to reproduce a grass feel, being made of shorter fibers. This allows the improvement in speed brought by earlier artificial turfs to be retained. This development is problematic for areas which cannot afford to build an extra artificial field for hockey alone. The International Hockey Federation and manufacturers are driving research in order to produce new fields that will be suitable for a variety of sports.

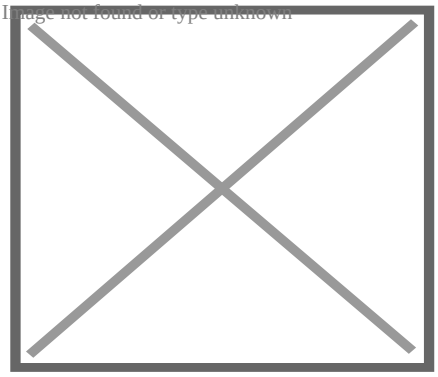
The use of artificial turf in conjunction with changes in the game's rules (e.g., the removal of offside, introduction of rolling substitutes and the self-pass, and to the interpretation of obstruction) have contributed significantly to change the nature of the game, greatly increasing the speed and intensity of play as well as placing far greater demands on the conditioning of the players.

Association football

[edit]



Aspmyra, Norway: home of the football club FK Bodø/Glimt



A slide tackle driving up crumbed rubber in the playing surface

Some association football clubs in Europe installed synthetic surfaces in the 1980s, which were called "plastic pitches" (often derisively) in countries such as England. There, four professional club venues had adopted them; Queens Park Rangers's Loftus Road (1981–1988), Luton Town 's Kenilworth Road (1985–1991), Oldham Athletic's Boundary Park (1986–1991) and Preston

North End's Deepdale (1986–1994). QPR had been the first team to install an artificial pitch at their stadium in 1981, but were the first to remove it when they did so in 1988. Artificial pitches were banned from top-flight (then First Division) football in 1991, forcing Oldham Athletic to remove their artificial pitch after their promotion to the First Division in 1991, while then top-flight Luton Town also removed their artificial pitch at the same time. The last Football League team to have an artificial pitch in England was Preston North End, who removed their pitch in 1994 after eight years in use. Artificial pitches were banned from the top four divisions from 1995.

Artificial turf gained a bad reputation[*neutrality is disputed*] globally, with fans and especially with players. The first-generation artificial turf surfaces were carpet-like in their look and feel, and thus, a far harder surface than grass and soon became known[*by whom?*] as an unforgiving playing surface that was prone to cause more injuries, and in particular, more serious joint injuries, than would comparatively be suffered on a grass surface. This turf was also regarded as aesthetically unappealing to many fans[*weasel words*].

> In 1981, London football club Queens Park Rangers dug up its grass pitch and installed an artificial one. Others followed, and by the mid-1980s there were four artificial surfaces in operation in the English league. They soon became a national joke: the ball pinged round like it was made of rubber, the players kept losing their footing, and anyone who fell over risked carpet burns. Unsurprisingly, fans complained that the football was awful to watch and, one by one, the clubs returned to natural grass.[19]

In the 1990s, many North American soccer clubs also removed their artificial surfaces and re-installed grass, while others moved to new stadiums with state-of-the-art grass surfaces that were designed to withstand cold temperatures where the climate demanded it. The use of artificial turf was later banned by FIFA, UEFA and by many domestic football associations, though, in recent years,[*when?*] both governing bodies have expressed resurrected interest in the use of artificial surfaces in competition, provided that they are FIFA Recommended. UEFA has now been heavily involved in programs to test artificial turf, with tests made in several grounds meeting with FIFA approval. A team of UEFA, FIFA and German company Polytan conducted tests in the Stadion Salzburg Wals-Siezenheim in Salzburg, Austria which had matches played on it in UEFA Euro 2008. It is the second FIFA 2 Star approved artificial turf in a European domestic top flight, after Dutch club Heracles Almelo received the FIFA certificate in August 2005.[20] The tests were approved.[21]

FIFA originally launched its FIFA Quality Concept in February 2001. UEFA announced that starting from the 2005–06 season, approved artificial surfaces were to be permitted in their competitions.

A full international fixture for the 2008 European Championships was played on 17 October 2007 between England and Russia on an artificial surface, which was installed to counteract adverse weather conditions, at the Luzhniki Stadium in Moscow.[22][23] It was one of the first full international games to be played on such a surface approved by FIFA and UEFA. The latter

ordered the 2008 European Champions League final hosted in the same stadium in May 2008 to place on grass, so a temporary natural grass field was installed just for the final.

UEFA stressed that artificial turf should only be considered an option where climatic conditions necessitate.[24] One Desso "hybrid grass" product incorporates both natural grass and artificial elements.[25]

In June 2009, following a match played at Estadio Ricardo Saprissa in Costa Rica, American national team manager Bob Bradley called on FIFA to "have some courage" and ban artificial surfaces.

FIFA designated a star system for artificial turf fields that have undergone a series of tests that examine quality and performance based on a two star system.[26] Recommended two-star fields may be used for FIFA Final Round Competitions as well as for UEFA Europa League and Champions League matches.[27] There are currently 130 FIFA Recommended 2-Star installations in the world.[28]

In 2009, FIFA launched the Preferred Producer Initiative to improve the quality of artificial football turf at each stage of the life cycle (manufacturing, installation and maintenance).[29] Currently, there are five manufacturers that were selected by FIFA: Act Global, Limonta, Desso, GreenFields, and Edel Grass. These firms have made quality guarantees directly to FIFA and have agreed to increased research and development.

In 2010, Estadio Omnilife with an artificial turf opened in Guadalajara to be the new home of Chivas, one of the most popular teams in Mexico. The owner of Chivas, Jorge Vergara, defended the reasoning behind using artificial turf because the stadium was designed to be "environment friendly and as such, having grass would result [in] using too much water."[30] Some players criticized the field, saying its harder surface caused many injuries. When Johan Cruyff became the adviser of the team, he recommended the switch to natural grass, which the team did in 2012.[31]

In November 2011, it was reported that a number of English football clubs were interested in using artificial pitches again on economic grounds.[32] As of January 2020, artificial pitches are not permitted in the Premier League or Football League but are permitted in the National League and lower divisions. Bromley are an example of an English football club who currently use a third-generation artificial pitch.[33] In 2018, Sutton United were close to achieving promotion to the Football League and the debate in England about artificial pitches resurfaced again. It was reported that, if Sutton won promotion, they would subsequently be demoted two leagues if they refused to replace their pitch with natural grass.[34] After Harrogate Town's promotion to the Football League in 2020, the club was obliged to install a natural grass pitch at Wetherby Road;[35] and after winning promotion in 2021 Sutton Utd were also obliged to tear up their artificial pitch and replace it with grass, at a cost of more than £500,000.[36] Artificial pitches are permitted in all rounds of the FA Cup competition.

The 2015 FIFA Women's World Cup took place entirely on artificial surfaces, as the event was played in Canada, where almost all of the country's stadiums use artificial turf due to climate issues. This plan garnered criticism from players and fans, some believing the artificial surfaces make players more susceptible to injuries. Over fifty of the female athletes protested against the use of artificial turf on the basis of gender discrimination.[37][38] Australia winger Caitlin Foord said that after playing 90 minutes there was no difference to her post-match recovery – a view shared by the rest of the squad. The squad spent much time preparing on the surface and had no problems with its use in Winnipeg. "We've been training on [artificial] turf pretty much all year so I think we're kind of used to it in that way ... I think grass or turf you can still pull up sore after a game so it's definitely about getting the recovery in and getting it right", Foord said.[39] A lawsuit was filed on 1 October 2014 in an Ontario tribunal court by a group of women's international soccer players against FIFA and the Canadian Soccer Association and specifically points out that in 1994 FIFA spent $2 million to plant natural grass over artificial turf in New Jersey and Detroit.[40] Various celebrities showed their support for the women soccer players in defense of their lawsuit, including actor Tom Hanks, NBA player Kobe Bryant and U.S. men's soccer team keeper Tim Howard. Even with the possibility of boycotts, FIFA's head of women's competitions, Tatjana Haenni, made it clear that "we play on artificial turf and there's no Plan B."[41][42]

The first stadium to use artificial turf in Brazil was Atlético Paranaense's Arena da Baixada in 2016. In 2020, the administration of Allianz Parque, home of Sociedade Esportiva Palmeiras, started the implementation of the second artificial pitch in the country.[43]

Rugby union

[edit]

Rugby union also uses artificial surfaces at a professional level. Infill fields are used by English Premiership Rugby teams Gloucester, Newcastle Falcons, Saracens F.C. and the now defunct Worcester Warriors, as well as United Rugby Championship teams Cardiff, Edinburgh and Glasgow Warriors. Some fields, including Twickenham Stadium, have incorporated a hybrid field, with grass and synthetic fibers used on the surface. This allows for the field to be much more hard wearing, making it less susceptible to weather conditions and frequent use.

Tennis

[edit]
Main article: Tennis court

Carpet has been used as a surface for indoor tennis courts for decades, though the first carpets used were more similar to home carpets than a synthetic grass. After the introduction of AstroTurf, it came to be used for tennis courts, both indoor and outdoor, though only a small minority of courts use the surface.[44][45] Both infill and non-infill versions are used, and are typically considered medium-fast to fast surfaces under the International Tennis Federation's classification scheme.[44] A distinct form found in tennis is an "artificial clay" surface,[44] which seeks to simulate a clay court by using a very short pile carpet with an infill of the same loose aggregate used for clay courts that rises above the carpet fibers.[44]

Tennis courts such as Wimbledon are considering using an artificial hybrid grass to replace their natural lawn courts. Such systems incorporate synthetic fibers into natural grass to create a more durable surface on which to play.[46] Such hybrid surfaces are currently used for some association football stadiums, including Wembley Stadium.

Golf

[edit]

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Synthetic turf can also be used in the golf industry, such as on driving ranges, putting greens and even in some circumstances tee boxes. For low budget courses, particularly those catering to casual golfers, synthetic putting greens offer the advantage of being a relatively cheap alternative to installing and maintaining grass greens, but are much more similar to real grass in appearance and feel compared to sand greens which are the traditional alternative surface. Because of the vast areas of golf courses and the damage from clubs during shots, it is not feasible to surface fairways with artificial turf.

Motor racing

[edit]

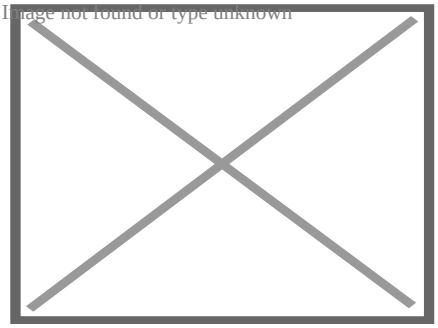
Artificial grass is used to line the perimeter of some sections of some motor circuits, and offers less grip than some other surfaces.[47] It can pose an obstacle to drivers if it gets caught on their car.[48]

Other applications

[edit]

Landscaping

[edit]



A home's yard with artificial grass.

Since the early 1990s, the use of synthetic grass in the more arid western states of the United States has moved beyond athletic fields to residential and commercial landscaping.[49] New water saving programs, as of 2019, which grant rebates for turf removal, do not accept artificial turf as replacement and require a minimum of plants.[50][51]

The use of artificial grass for convenience sometimes faces opposition: Legislation frequently seeks to preserve natural gardens and fully water permeable surfaces, therefore restricting the use of hardscape and plantless areas, including artificial turf. In several locations in different countries, homeowners have been fined, ordered to remove artificial turf and/or had to defend themselves in courts. Many of these restrictions can be found in local bylaws and ordinances. These not always applied in a consistent manner,[52][53][54] especially in municipalities that utilize a complaint-based model for enforcing local laws.

Sunlight reflections from nearby windows can cause artificial turf to melt. This can be avoided by adding perforated vinyl privacy window film adhesive to the outside of the window causing the reflection.

Airports

[edit]

Artificial turf has been used at airports.[55] Here it provides several advantages over natural turf – it does not support wildlife, it has high visual contrast with runways in all seasons, it reduces foreign object damage (FOD) since the surface has no rocks or clumps, and it drains well.[56]

Some artificial turf systems allow for the integration of fiber-optic fibers into the turf. This would allow for runway lighting to be embedded in artificial landing surfaces for aircraft (or lighting or advertisements to be directly embedded in a playing surface).[57]

Tanks for octopuses

[edit]

Artificial turf is commonly used for tanks containing octopusses, in particular the Giant Pacific octopus since it is a reliable way to prevent the octopusses from escaping their tank, as they prevent the suction cups on the tentacles from getting a tight seal.[58]

Environmental and safety concerns

[edit]

Environmental footprint

[edit]

The first major academic review of the environmental and health risks and benefits of artificial turf was published in 2014;[59] it was followed by extensive research on possible risks to human health, but holistic analyses of the environmental footprint of artificial turf compared with natural turf only began to emerge in the 2020s,[60][61] and frameworks to support informed policymaking were still lacking.[62][63] Evaluating the relative environmental footprints of natural and artificial turf is complex, with outcomes depending on a wide range of factors, including (to give the example of a sports field):[59]

- what ecosystem services are lost by converting a site to a sports pitch
- how resource-intensive is the landscaping work and transport of materials to create a pitch
- whether input materials are recycled and whether these are recycled again at the end of the pitch's life
- how resource-intensive and damaging maintenance is (whether through water, fertiliser, weed-killer, reapplication of rubber crumb, snow-clearing, etc.)
- how intensively the facility is used, for how long, and whether surface type can reduce the overall number of pitches required

Artificial turf has been shown to contribute to global warming by absorbing significantly more radiation than living turf and, to a lesser extent, by displacing living plants that could sequester carbon dioxide through photosynthesis;[64] a study at New Mexico State University found that in that environment, water-cooling of artificial turf can demand as much water as natural turf.[65]

However, a 2022 study that used real-world data to model a ten-year-life-cycle environmental footprint for a new natural-turf soccer field compared with an artificial-turf field found that the natural-turf field contributed twice as much to global warming as the artificial one (largely due to a more resource-intensive construction phase), while finding that the artificial turf would likely cause more pollution of other kinds. It promoted improvements to usual practice such as the substitution of cork for rubber in artificial pitches and more drought-resistant grasses and electric mowing in natural ones.[60] In 2021, a Zurich University of Applied Sciences study for the city of Zurich, using local data on extant pitches, found that, per hour of use, natural turf had the lowest environmental footprint, followed by artificial turf with no infill, and then artificial turf using an infill (e.g. granulated rubber). However, because it could tolerate more hours of use, unfilled artificial turf often had the lowest environmental footprint in practice, by reducing the total number of pitches required. The study recommended optimising the use of existing pitches before building new ones, and choosing the best surface for the likely intensity of use.[61] Another suggestion is the introduction of green roofs to offset the conversion of grassland to artificial turf.[66]

Maintenance

[edit]

Contrary to popular belief, artificial turf is not maintenance free. It requires regular maintenance, such as raking and patching, to keep it functional and safe.[67]

Pollution and associated health risks

[edit]
Further information: Artificial turf–cancer hypothesis

Some artificial turf uses infill such as silicon sand, but most uses granulated rubber, referred to as "crumb rubber". Granulated rubber can be made from recycled car tires and may carry heavy metals, PFAS chemicals, and other chemicals of environmental concern. The synthetic fibers of artificial turf are also subject to degradation. Thus chemicals from artificial turfs leach into the environment, and artificial turf is a source of microplastics pollution and rubber pollution in air, fresh-water, sea and soil environments.[68][69][70][71][72][73][59][*excessive citations*] In Norway, Sweden, and at least some other places, the rubber granulate from artificial turf infill constitutes the second largest source of microplastics in the environment after the tire and road wear particles that make up a large portion of the fine road debris.[74][75][76] As early as 2007, Environment and Human Health, Inc., a lobby-group, proposed a moratorium on the use of ground-up rubber tires in fields and playgrounds based on health concerns;[77] in September 2022, the European Commission made a draft proposal to restrict the use of microplastic

granules as infill in sports fields.[78]

What is less clear is how likely this pollution is in practice to harm humans or other organisms and whether these environmental costs outweigh the benefits of artificial turf, with many scientific papers and government agencies (such as the United States Environmental Protection Agency) calling for more research.[2] A 2018 study published in *Water, Air, & Soil Pollution* analyzed the chemicals found in samples of tire crumbs, some used to install school athletic fields, and identified 92 chemicals only about half of which had ever been studied for their health effects and some of which are known to be carcinogenic or irritants. It stated "caution would argue against use of these materials where human exposure is likely, and this is especially true for playgrounds and athletic playing fields where young people may be affected".[79] Conversely, a 2017 study in *Sports Medicine* argued that "regular physical activity during adolescence and early adulthood helps prevent cancer later in life. Restricting the use or availability of all-weather year-round synthetic fields and thereby potentially reducing exercise could, in the long run, actually increase cancer incidence, as well as cardiovascular disease and other chronic illnesses."[80]

The possibility that carcinogenic substances in artificial turf could increase risks of human cancer (the artificial turf–cancer hypothesis) gained a particularly high profile in the first decades of the twenty-first century and attracted extensive study, with scientific reports around 2020 finding cancer-risks in modern artificial turf negligible.[81][82][83][84] But concerns have extended to other human-health risks, such as endocrine disruption that might affect early puberty, obesity, and children's attention spans.[85][86][87][88] Potential harm to fish[70] and earthworm[89] populations has also been shown.

A study for the New Jersey Department of Environmental Protection analyzed lead and other metals in dust kicked into the air by physical activity on five artificial turf fields. The results suggest that even low levels of activity on the field can cause particulate matter containing these chemicals to get into the air where it can be inhaled and be harmful. The authors state that since no level of lead exposure is considered safe for children, "only a comprehensive mandated testing of fields can provide assurance that no health hazard on these fields exists from lead or other metals used in their construction and maintenance."[90]

Kinesiological health risks

[edit]

A number of health and safety concerns have been raised about artificial turf.[2] Friction between skin and older generations of artificial turf can cause abrasions and/or burns to a much greater extent than natural grass.[91] Artificial turf tends to retain heat from the sun and can be much hotter than natural grass with prolonged exposure to the sun.[92]

There is some evidence that periodic disinfection of artificial turf is required as pathogens are not broken down by natural processes in the same manner as natural grass. Despite this, a 2006 study suggests certain microbial life is less active in artificial turf.[91]

There is evidence showing higher rates of player injury on artificial turf. By November 1971, the injury toll on first-generation artificial turf had reached a threshold that resulted in congressional hearings by the House subcommittee on commerce and finance.[93][94][95] In a study performed by the National Football League Injury and Safety Panel, published in the October 2012 issue of the *American Journal of Sports Medicine*, Elliott B. Hershman et al. reviewed injury data from NFL games played between 2000 and 2009, finding that "the injury rate of knee sprains as a whole was 22% higher on FieldTurf than on natural grass. While MCL sprains did not occur at a rate significantly higher than on grass, rates of ACL sprains were 67% higher on FieldTurf."[96] Metatarsophalangeal joint sprain, known as "turf toe" when the big toe is involved, is named from the injury being associated with playing sports on rigid surfaces such as artificial turf and is a fairly common injury among professional American football players. Artificial turf is a harder surface than grass and does not have much "give" when forces are placed on it.[97]

See also

[edit]

- International Association for Sports Surface Sciences
- List of college football stadiums with non-traditional field colors
- Poly-Turf
- The Flying Grass Carpet

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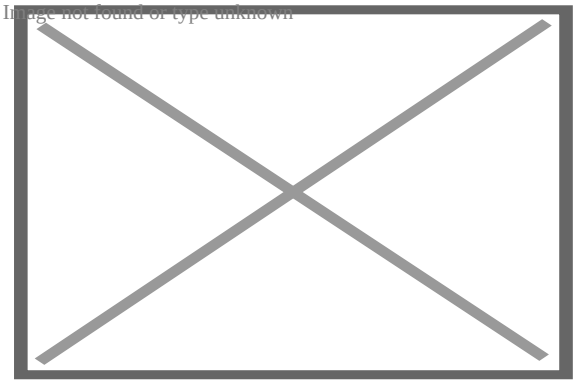
About Landscaping

"Landscapers" redirects here. For the 2021 true crime TV series, see Landscapers (TV series).



Landscaping an elementary school courtyard in the city of Kuching

Landscaping refers to any activity that modifies the visible features of an area of land, including the following:

1. Living elements, such as flora or fauna; or what is commonly called gardening, the art and craft of growing plants with a goal of creating a beauty within the landscape.
2. Natural abiotic elements, such as landforms, terrain shape and elevation, or bodies of water.
3. Abstract elements, such as the weather and lighting conditions.

Landscaping requires a certain understanding of horticulture and artistic design, but is not limited to plants and horticulture. Sculpting land to enhance usability (patio, walkways, ponds, water features) are also examples of landscaping being used. When intended as purely an aesthetic change, the term **Ornamental Landscaping** is used.[1]

Often, designers refer to landscaping as an extension of rooms in your house (each one has a function). Outdoor spaces have a vast amount of flexibility as far as materials and function. It is often said the only limitation to outdoor space is one's imagination.

Understanding the land

[edit]

Construction requires both study and observation, and the process varies in different parts of the world. Landscaping varies according to different regions.[2] Therefore, normally local natural experts are recommended if it is done for the first time. Understanding of the site is one of the chief essentials for successful landscaping.[3] Different natural features and phenomena, like the position of the sun, terrain, topography, soil qualities, prevailing winds, depth of the frost line , and the system of native flora and fauna must be taken into account.[4] Sometimes the land is not fit for landscaping. In order to landscape it, the land must be reshaped to direct water for appropriate drainage. This reshaping of land is called grading.[4] Sometimes in large landscaping projects like, parks, sports fields and reserves soil may need to be improved by adding nutrients for growth of plants or turf, this process is called soil amelioration.[5]

Removal of earth from the land is called cutting while when earth is added to the slope, it is called filling. Sometimes the grading process may involve removal of excessive waste (landfills), soil and rocks, so designers should take into account while in the planning stage.[6][7]

Additional information

[edit]

At the start, the landscaping contractor issues a statement which is a rough design and layout of what could be done with the land in order to achieve the desired outcome.[4] Different pencils are required to make graphics of the picture. Landscaping has become more technological than natural, as few projects begin without bulldozers, lawnmowers, or chainsaws.[2] Different areas have different qualities of plants. When growing new grass, it should ideally be done in the spring and the fall seasons to maximize growth and to minimize the spread of weeds. It is generally agreed that organic or chemical fertilizers are required for good plant growth. Some landscapers prefer to use mix gravel with rocks of varying sizes to add interest in large areas.[8]

See also

[edit]

- Aquascaping
- Arboriculture
- Ecoscaping
- Horticulture
- Landscape architecture
- Landscape design
- Landscape ecology
- Landscape engineering

- Landscape planning
- Landscape archaeology
- Organic lawn management
- Naturescaping
- Sustainable landscaping
- Terraforming
- Xeriscaping

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Land use

General

- Degradation
- Development/Conversion
- Planning
- Conflict
- Land management
- Landscaping
  - Integrated landscape management
- Land grabbing
- Land consumption
- Land loss
  - Habitat destruction
- Illegal construction
- Land reclamation
- Land rehabilitation
- Landscape ecology
- Rangeland management
- Environmental planning
  - Leopold matrix
  - Watertable control
- Developed environments
  - Built-up area
- Locally unwanted land use

Property

- Property
  - Subdivision (land)
  - Real estate development
- Land development bank
- Land (economics)
- Customary land

Related fields

- Soil
  - Soil science
  - Soil compaction
  - Soil contamination
  - Alkali soil
- Pollution
- Deforestation
- Urban planning
- Agriculture
  - Drainage system (agriculture)
  - Land change modeling

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About swimming pool

For other uses, see Swimming pool (disambiguation).

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Backyard swimming pool

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Olympic-size swimming pool and starting blocks at Melbourne Sports and Aquatic Centre used for the 2006 Commonwealth Games in Melbourne, Australia

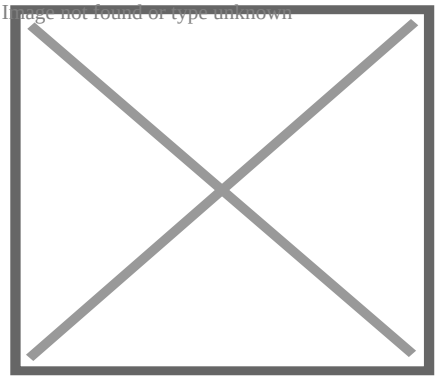
A **swimming pool**, **swimming bath**, **wading pool**, **paddling pool**, or simply **pool**, is a structure designed to hold water to enable swimming and associated activities. Pools can be built into the ground (in-ground pools) or built above ground (as a freestanding construction or as part of a building or other larger structure), and may be found as a feature aboard ships. In-ground pools are most commonly constructed from materials such as concrete, natural stone, metal, plastic, composite or fiberglass, and may follow a standardized size, the largest of which is the Olympic-size swimming pool, or be of a custom shape.

Many health clubs, fitness centers, and private clubs have pools for their members, often used for exercise. In much of the world, local governments provide publicly-run pools for their citizens. Many of these are outdoors; indoor pools are typically part of a leisure centre. Many hotels have a pool for the use of their guests. Pools as a feature in hotels are more common in tourist areas or near convention centers. Many universities and other institutional communities provide pools for their members., often as part of an institution-specific athletic or recreational complex. Apartment complexes and residential subdivisions may provide a pool for the use of their residents. Private residences, particularly in areas with warm climates, may have their own pools.

Educational facilities such as high schools and universities often have pools for physical education classes, recreational activities, leisure, and competitive athletics such as swimming teams. Hot tubs and spas are small heated pools used for relaxation or hydrotherapy. Specialised pools are also used for diving, water sports, and physical therapy, as well as for training of lifeguards and astronauts. Swimming pools most commonly use chlorinated water, or salt water, and may be heated or unheated.

History

[edit]
See also: History of water supply and sanitation



Ancient Roman baths in Bath, England

Pre-modern

[edit]

The "Great Bath" at the site of Mohenjo-Daro in modern-day Pakistan was most likely the first swimming pool, dug during the 3rd millennium BC. This pool is 12 by 7 metres (39 by 23 feet), is lined with bricks, and was covered with a tar-based sealant.[1]

Ancient Greeks and Romans built artificial pools for athletic training in the palaestras, for nautical games and for military exercises. Roman emperors had private swimming pools in which fish were also kept, hence one of the Latin words for a pool was *piscina*. The first heated swimming pool was built by Gaius Maecenas in his gardens on the Esquiline Hill of Rome, likely sometime between 38 and 8 BC.[2] Gaius Maecenas was a wealthy imperial advisor to Augustus and considered one of the first patrons of arts.[3]

Ancient Sinhalese built a pair of pools called "Kuttam Pokuna" in the kingdom of Anuradhapura, Sri Lanka, in the 6th century AD. They were decorated with flights of steps, punkalas or pots of abundance, and scroll design.[4][5]

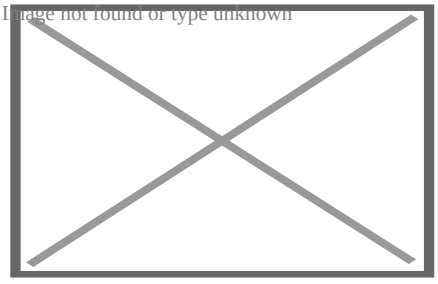
19th and 20th centuries

[edit]

Swimming pools became popular in Britain in the mid-19th century. As early as 1837, six indoor pools with diving boards existed in London, England.[6] The Maidstone Swimming Club in Maidstone, Kent is believed to be the oldest surviving swimming club in Britain. It was formed in 1844, in response to concerns over drownings in the River Medway, especially since would-be rescuers would often drown because they themselves could not swim to safety. The club used to swim in the River Medway, and would hold races, diving competitions and water polo matches. *The South East Gazette* July 1844 reported an aquatic breakfast party: coffee and biscuits were served on a floating raft in the river. The coffee was kept hot over a fire; club members had to tread water and drink coffee at the same time. The last swimmers managed to overturn the raft, to the amusement of 150 spectators.[7]

The Amateur Swimming Association was founded in 1869 in England,[*citation needed*] and the Oxford Swimming Club in 1909.[8] The presence of indoor baths in the cobbled area of Merton Street might have persuaded the less hardy of the aquatic brigade to join. So, bathers gradually became swimmers, and bathing pools became swimming pools.[*citation needed*] In 1939, Oxford created its first major public indoor pool at Temple Cowley.

The modern Olympic Games started in 1896 and included swimming races, after which the popularity of swimming pools began to spread. In the US, the Racquet Club of Philadelphia clubhouse (1907) boasts one of the world's first modern above-ground swimming pools. The first swimming pool to go to sea on an ocean liner was installed on the White Star Line's *Adriatic* in 1906.[9] The oldest known public swimming pool in the U.S., Underwood Pool, is located in Belmont, Massachusetts.[10]



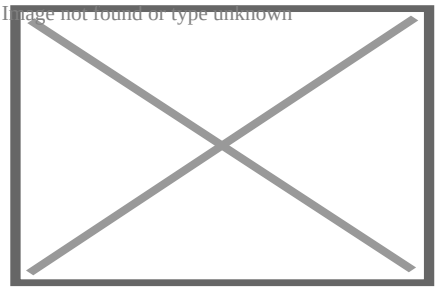
The Yrjönkatu Swimming Hall, the oldest swimming hall in Finland, photographed on its opening day on 4 June 1928 in Kamppi, Helsinki[11]

Interest in competitive swimming grew following World War I. Standards improved and training became essential. Home swimming pools became popular in the United States after World War II and the publicity given to swimming sports by Hollywood films such as Esther Williams' *Million Dollar Mermaid* made a home pool a desirable status symbol. More than 50 years later, the home or residential swimming pool is a common sight. Some small nations enjoy a thriving swimming pool industry (e.g., New Zealand pop. 4,116,900 – holds the record in pools per capita with 65,000 home swimming pools and 125,000 spa pools).[12]

A two-storey, white concrete swimming pool building composed of horizontal cubic volumes built in 1959 at the Royal Roads Military College is on the Canadian Register of Historic Places.[13]

World records

[edit]
Further information: List of largest swimming pools



Moskva Pool, at one time the largest swimming pool in the world (1980)

According to the Guinness World Records, the largest swimming pool in the world is San Alfonso del Mar Seawater pool in Algarrobo, Chile. It is 1,013 m (3,323 ft) long and has an area of 8 ha (20 acres). At its deepest, it is 3.5 m (11 ft) deep.[14] It was completed in December 2006.[15]

The largest indoor wave pool in the world is at DreamWorks Water Park within the American Dream shopping and entertainment complex at the Meadowlands Sports Complex in East Rutherford, New Jersey, United States, and the largest indoor pool in North America is at the Neutral Buoyancy Lab in the Sonny Carter Training Facility at NASA JSC in Houston.[16][17]

In 2021, Deep Dive Dubai, located in Dubai, UAE, was certified by the Guinness Book of World Records as the world's deepest swimming pool reaching 60 metres (200 ft).[18][19] The Y-40 swimming pool at the Hotel Terme Millepini in Padua, Italy, previously held the record, 42.15 m (138.3 ft), from 2014 until 2021.[20]

The Fleishhacker Pool in San Francisco was the largest heated outdoor swimming pool in the United States. Opened on 23 April 1925, it measured 1,000 by 150 ft (300 by 50 m) and was so large that the lifeguards required kayaks for patrol. It was closed in 1971 due to low patronage.[21]

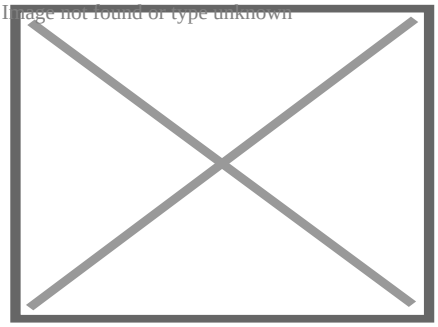
In Europe, the largest swimming pool opened in 1934 in ElblÃƒÆ'Ã†â€™Ã‚Ã¢â€šÂ¬Ã…Â¾ÃƒÆ'Ã‚Ã¢Ã‚Ã¢â‚¬Å¡Ã‚Â¬Ã‚â€šÃ‚¦g (Poland), providing a water area of 33,500 square metres (361,000 sq ft).[22]

One of the largest swimming pools ever built was reputedly created in Moscow after the Palace of Soviets remained uncompleted. The foundations of the palace were converted into the Moskva Pool open-air swimming pool after the process of de-Stalinisation.[23] However, after the fall of communism, Christ the Saviour Cathedral was re-built on the site between 1995 and 2000; the cathedral had originally been located there.[*citation needed*]

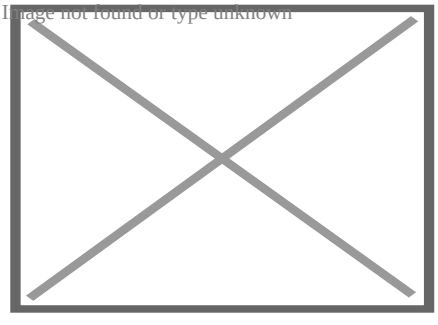
The highest swimming pool is believed to be in Yangbajain (Tibet, China). This resort is located at 4,200 m (13,800 ft) AMSL and has two indoor swimming pools and one outdoor swimming pool, all filled with water from hot springs.[24]

Dimensions

[edit]
Further information: § Competition pools



Cairns Lagoon, a public swimming pool in Australia



Rooftop pool in Manhattan

Length: Most pools in the world are measured in metres, but in the United States pools are often measured in feet and yards. In the UK most pools are calibrated in metres, but older pools

measured in yards still exist. In the US, pools tend to either be 25 yards (**SCY**-short course yards), 25 metres (**SCM**-short course metres) or 50 metres (**LCM** - long course meters). US high schools and the NCAA conduct short course (25 yards) competition. There are also many pools 33+1?3 m long, so that 3 lengths = 100 m. This pool dimension is commonly used to accommodate water polo.[*citation needed*]

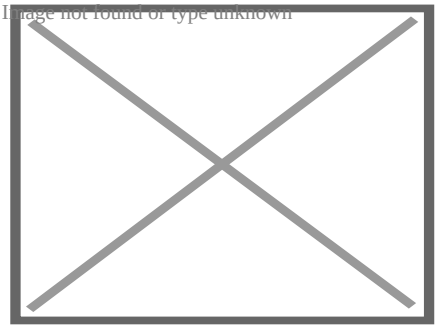
USA Swimming (USA-S) swims in both metric and non-metric pools. However, the international standard is metres, and world records are only recognized when swum in 50 m pools (or 25 m for short course) but 25-yard pools are very common in the US. In general, the shorter the pool, the faster the time for the same distance, since the swimmer gains speed from pushing off the wall after each turn at the end of the pool.

Width: The width of the pool depends on the number of swimming lanes and the width of each individual lane. In an Olympic swimming pool each lane is 2.5 meters wide[25] and contains 10 lanes, thus making the pool 25 meters wide.

Depth: The depth of a swimming pool depends on the purpose of the pool, and whether it is open to the public or strictly for private use. If it is a private casual, relaxing pool, it may go from 1.0 to 2.0 m (3.3 to 6.6 ft) deep. If it is a public pool designed for diving, it may slope from 3.0 to 5.5 m (10 to 18 ft) in the deep end. A children's play pool may be from 0.3 to 1.2 m (1 to 4 ft) deep. Most public pools have differing depths to accommodate different swimmer requirements. In many jurisdictions, it is a requirement to show the water depth with clearly marked depths affixed to the pool walls,[26][27] although this may not be the case for private pools in some jurisdictions.[28]

Types

[edit]

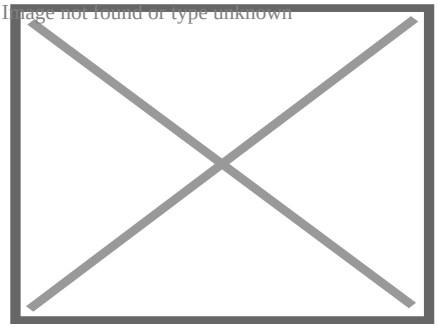


A swimming pool on the deck of the *Celebrity Silhouette*

Pools can be either indoors or outdoors. They can be of any size and shape, and inground or above ground. Most pools are permanent fixtures, while others are temporary, collapsible structures.

Private pools

[edit]



A collapsible above-ground swimming pool

Private pools are usually smaller than public pools, on average 3.7 m × 7.3 m (12 ft × 24 ft) to 6.1 m × 12.2 m (20 ft × 40 ft) whereas public pools usually start at 20 m (66 ft).[*citation needed*] Home pools can be permanently built-in, or be assembled above ground and disassembled after summer. Privately owned outdoor pools in backyards or gardens started to proliferate in the 1950s in regions with warm summer climates, particularly in the United States with desegregation.[29] A *plunge pool* is a smaller, permanently installed swimming pool, with a maximum size of approximately 3 m × 6 m (10 ft × 20 ft).[30][31][32]

Construction methods for private pools vary greatly. The main types of in-ground pools are gunite shotcrete, concrete, vinyl-lined, and one-piece fiberglass shells.

Many countries now have strict pool fencing requirements for private swimming pools, which require pool areas to be isolated so that unauthorized children younger than six years cannot enter. Many countries require a similar level of protection for the children residing in or visiting the house, although many pool owners prefer the visual aspect of the pool in close proximity to their living areas, and will not provide this level of protection. There is no consensus between states or countries on the requirements to fence private swimming pools, and in many places they are not required at all, particularly in rural settings.[33]

Children's pools

[edit]

"Children's pool" redirects here. For the beach in La Jolla, San Diego, see Children's Pool Beach.

Inexpensive temporary polyvinyl chloride pools can be bought in supermarkets and taken down after summer. They are used mostly outdoors in yards, are typically shallow, and often their

sides are inflated with air to stay rigid. When finished, the water and air can be let out and this type of pool can be folded up for convenient storage. They are regarded in the swimming pool industry as "splasher" pools intended for cooling off and amusing toddlers and children, not for swimming, hence the alternate name of "kiddie" pools.[*citation needed*]

Toys are available for children and other people to play with in pool water. They are often blown up with air so they are soft but still reasonably rugged, and can float in water.

A black Labrador Retriever bathing in a kiddie pool

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A black Labrador Retriever
bathing in a kiddie pool
Children playing in an inflatable pool

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Children playing in an
inflatable pool

Public pools

[edit]

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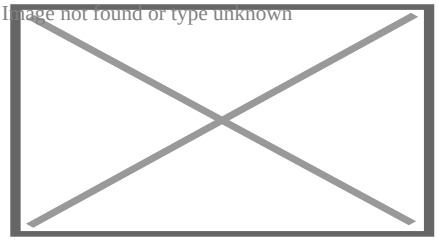
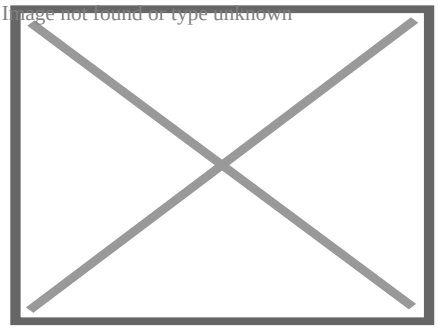
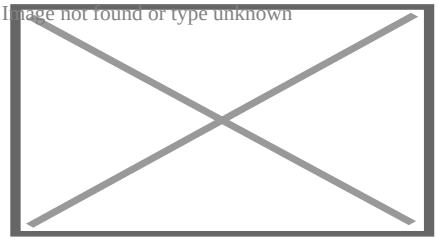


A hotel swimming pool in Miami



A spa at Hotel Fra Mare in Estonia

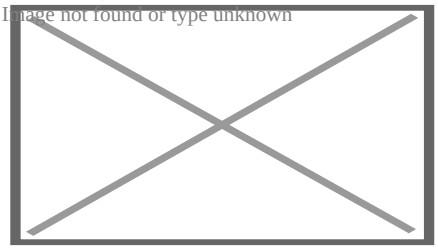


Tooting Bec Lido, in South London

Public pools are often part of a larger leisure center or recreational complex. These centres often have more than one pool, such as an indoor heated pool, an outdoor (chlorinated, saltwater or ozonated) pool which may be heated or unheated, a shallower children's pool, and a paddling pool for toddlers and infants. There may also be a sauna and one or more hot tubs or spa pools ("jacuzzis").

Many upscale hotels and holiday resorts have a swimming pool for use by their guests. If a pool is in a separate building, the building may be called a natatorium. The building may sometimes also have facilities for related activities, such as a diving tank. Larger pools sometimes have a diving board affixed at one edge above the water.

Many public swimming pools are rectangles 25 m or 50 m long, but they can be any size and shape. There are also elaborate pools with artificial waterfalls, fountains, splash pads, wave machines, varying depths of water, bridges, and island bars.



Children's pool at the SaiGaau Swimming Pool

Some swimming facilities have lockers for clothing and other belongings. The lockers can require a coin to be inserted in a slot, either as deposit or payment. There are usually showers – sometimes mandatory – before and/or after swimming. There are often also lifeguards to ensure the safety of users.

Wading or paddling pools are shallow bodies of water intended for use by small children, usually in parks. Concrete wading pools come in many shapes, traditionally rectangle, square or circle. Some are filled and drained daily due to lack of a filter system. Staff chlorinate the water to ensure health and safety standards.[*citation needed*]

Competition pools

[edit]

See: #Dimensions (above) and Swimming (sport)#Competition pools

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Racing pool at the University of Minnesota

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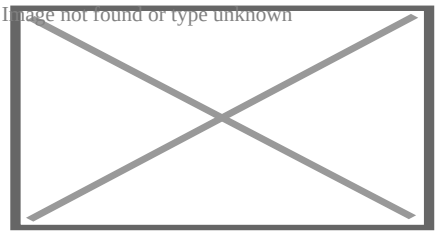
A simplified diagram of the FINA long course swimming pool standard, used at the World Championships and Summer Olympics

The Fédération Internationale de la Natation (FINA, International Swimming Federation) sets standards for competition pools: 25 or 50 m (82 or 164 ft) long and at least 1.35 m (4.4 ft) deep. Competition pools are generally indoors and heated to enable their use all year round, and to more easily comply with the regulations regarding temperature, lighting, and automatic officiating equipment.

An Olympic-size swimming pool (first used at the 1924 Olympics) is a pool that meets FINA's additional standards for the Olympic Games and for world championship events. It must be 50 by 25 m (164 by 82 ft) wide, divided into eight lanes of 2.5 m (8.2 ft) each, plus two areas of 2.5 m (8.2 ft) at each side of the pool. Depth must be at least 2 m (6.6 ft).[34]

The water must be kept at 25–28 °C (77–82 °F) and the lighting level at greater than 1500 lux. There are also regulations for color of lane rope, positioning of backstroke flags (5 metres from each wall), and so on.[34] Pools claimed to be "Olympic pools" do not always meet these regulations, as FINA cannot police use of the term. Touchpads are mounted on both walls for long course meets and each end for short course.

A pool may be referred to as fast or slow, depending on its physical layout.[35] Some design considerations allow the reduction of swimming resistance making the pool faster: namely, proper pool depth, elimination of currents, increased lane width, energy absorbing racing lane lines and gutters, and the use of other innovative hydraulic, acoustic and illumination designs.



Pool tiles' longer rectangular edges may be parallel to the pool's long sides to help swimmers orient themselves.

Exercise pools

[edit]

In the last two decades, a new style of pool has gained popularity. These consist of a small vessel (usually about 2.5 × 5 m) in which the swimmer swims in place, either against the push of an artificially generated water current or against the pull of restraining devices. These pools have several names, such as *swim spas*, *swimming machines*, or *swim systems*. They are all examples of different modes of resistance swimming.

Hot tubs and spa pools

[edit]
Further information: Hot tub

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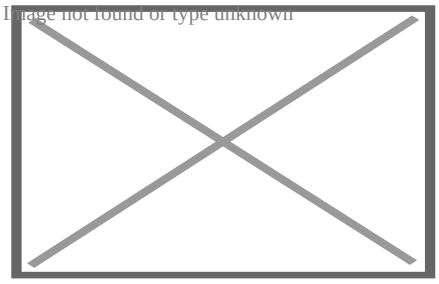
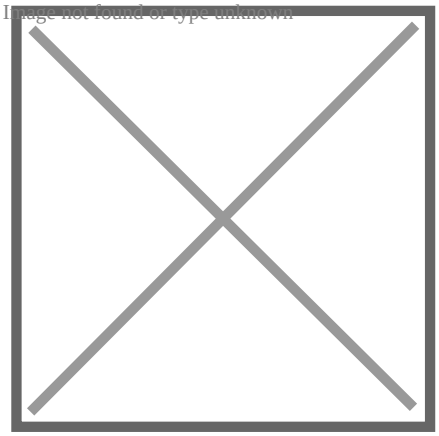


A home spa

Hot tubs and spa pools are common heated pools used for relaxation and sometimes for therapy. Commercial spas are common in the swimming pool area or sauna area of a health club or fitness center, in men's clubs, women's clubs, motels and exclusive five-star hotel suites. Spa clubs may have very large pools, some segmented into increasing temperatures. In Japan, men's clubs with many spas of different size and temperature are common.

Commercial spas are generally made of concrete, with a mosaic tiled interior. More recently[*when?*] with the innovation of the pre-form composite method where mosaic tiles are bonded to the shell this enables commercial spas to be completely factory manufactured to specification and delivered in one piece. Hot tubs are typically made somewhat like a wine barrel with straight sides, from wood such as Californian redwood held in place by metal hoops. Immersion of the head is not recommended in spas or hot tubs due to a potential risk of underwater entrapment from the pump suction forces. However, commercial installations in many countries must comply with various safety standards which reduce this risk considerably.



A boy relaxing in a hot tub

Home spas are a worldwide retail item in western countries since the 1980s, and are sold in dedicated spa stores, pool shops, department stores, the Internet, and catalog sales books. They are almost always made from heat-extruded acrylic sheet Perspex, often colored in marble look-alike patterns. They rarely exceed 6 m^2 (65 sq ft) and are typically 1 m (3 ft 3 in)

deep, restricted by the availability of the raw sheet sizes (typically manufactured in Japan). There is often a mid-depth seating or lounging system, and contoured lounger style reclining seats are common.

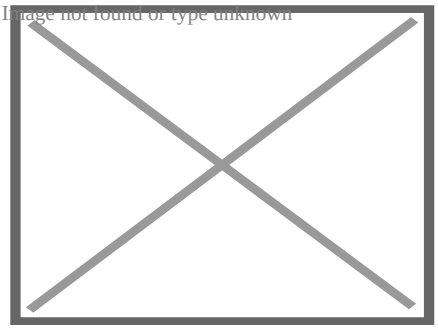
Upmarket spas often include a drinks tray, lights, LCD flat-screen TV sets and other features that make the pool a recreation center. Due to their family-oriented nature, home spas are normally operated from 36 to 39 °C (97 to 102 °F). Many pools are incorporated in a redwood or simulated wood surround, and are termed "portable" as they may be placed on a patio rather than sunken into a permanent location. Some portable spas are shallow and narrow enough to fit sideways through a standard door and be used inside a room. Low power electric immersion heaters are common with home spas.

Whirlpool tubs first became popular in the U.S. during the 1960s and 1970s. A spa is also called a "jacuzzi" there, as the word became a generic after-plumbing component manufacturer; Jacuzzi introduced the "spa whirlpool" in 1968. Air bubbles may be introduced into the nozzles via an air-bleed venturi pump that combines cooler air with the incoming heated water to cool the pool if the temperature rises uncomfortably high. Some spas have a constant stream of bubbles fed via the seating area of the pool, or a footwell area. This is more common as a temperature control device where the heated water comes from a natural (uncontrolled heat) geothermal source, rather than artificially heated.

Water temperature is usually very warm to hot – 38 to 42 °C (100 to 108 °F) – so bathers usually stay in for only 20 to 30 minutes. Bromine or mineral sanitizers are often recommended as sanitizers for spas because chlorine dissipates at a high temperature, thereby heightening its strong chemical smell. Ozone is an effective bactericide and is commonly included in the circulation system with cartridge filtration, but not with sand media filtration due to clogging problems with turbid body fats.

Ocean pools

[edit]



An ocean pool at Coogee in Sydney, Australia

In the early 20th century, especially in Australia, ocean pools were built, typically on headlands by enclosing part of the rock shelf, with water circulated through the pools by flooding from tidal tanks or by regular flooding over the side of the pools at high tide. This continued a pre-European tradition of bathing in rockpools with many of the current sites being expanded from sites used by Aboriginal Australians or early European settlers. Bathing in these pools provided security against both rough surf and sea life. There were often separate pools for women and men, or the pool was open to the sexes at different times with a break for bathers to climb in without fear of observation by the other sex.[36] These were the forerunners of modern "Olympic" pools. A variation was the later development of sea- or harbour-side pools that circulated sea water using pumps. A pool of this type was the training ground for Australian Olympian Dawn Fraser.

There are currently about 100 ocean baths in New South Wales, which can range from small pools roughly 25 metres long and "Olympic Sized" (50m) to the very large, such as the 50 × 100 m baths in Newcastle. While most are free, a number charge fees, such as the Bondi Icebergs Club pool at Bondi Beach. Despite the development of chlorinated and heated pools, ocean baths remain a popular form of recreation in New South Wales.

A semi-natural ocean pool exists on the central coast of New South Wales; it is called The Bogey Hole.

Infinity pools

[edit]

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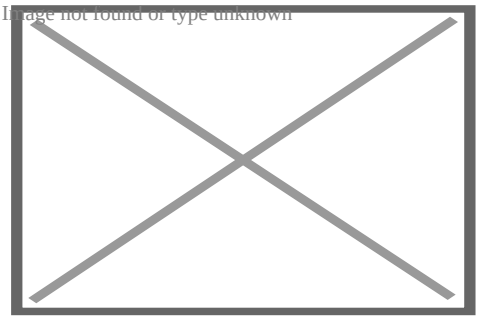

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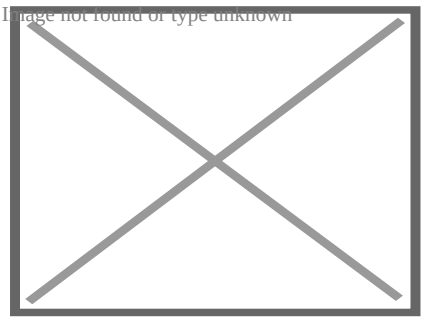


The Marina Bay Sands SkyPark Infinity Pool in Singapore, viewed from the poolside (left) and near the edge (right)

An infinity pool (also named *negative edge* or *vanishing edge pool*) is a swimming pool which produces a visual effect of water extending to the horizon, vanishing, or extending to "infinity". Often, the water appears to fall into an ocean, lake, bay, or other similar body of water. The illusion is most effective whenever there is a significant change in elevation, though having a natural body of water on the horizon is not a limiting factor.[*citation needed*]

Natural pools and ponds

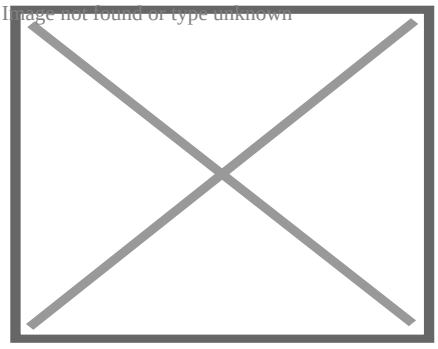
[edit]

Natural pools were developed in central and western Europe in the early and mid-1980s by designers and landscape architects with environmental concerns. They have recently been growing in popularity as an alternative to traditional swimming pools.[37][38] Natural pools are constructed bodies of water in which no chemicals or devices that disinfect or sterilize water are used, and all the cleaning of the pool is achieved purely with the motion of the water through biological filters and plants rooted hydroponically in the system. In essence, natural pools seek to recreate swimming holes and swimmable lakes, the environment where people feel safe swimming in a non-polluted, healthy, and ecologically balanced body of water.

Water in natural pools has many desirable characteristics. For example, red eyes, dried-out skin and hair, and bleached swimsuits associated with overly chlorinated water are naturally absent in natural pools.[*citation needed*] Natural pools, by requiring a water garden to be a part of the system, offer different aesthetic options and can support amphibious wildlife such as snails, frogs, and salamanders, and even small fish if desired.

Zero-entry swimming pools

[edit]

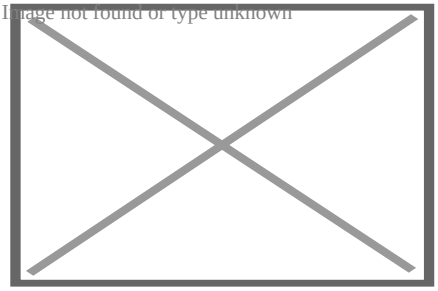


Zero-depth entry at the Centennial Beach aquatic park in Naperville, Illinois, United States

A *zero-entry swimming pool*, also called a *beach entry swimming pool*, has an edge or entry that gradually slopes from the deck into the water, becoming deeper with each step, in the manner of a natural beach. As there are no stairs or ladders to navigate, this type of entry assists older people, young children and people with accessibility problems (e.g., people with a physical disability) where gradual entry is useful.

Indoor pools

[edit]



Indoor swimming pool

Indoor pools are located inside a building with a roof and are insulated by at least three walls. Built for year-round swimming or training, they are found in all climate types. Since the buildings around indoor pools are insulated, heat escapes much less, making it less expensive to heat indoor pools than outdoor pools (all of whose heat escapes).[39]

Architecturally, an indoor pool may look like the rest of the building, but extra heating and ventilation and other engineering solutions are required to ensure comfortable humidity levels. In addition to drainage and automatic pool covers, there are a number of ways to remove the humidity present in the air in any wet indoor environment. Efficient dehumidification in the indoor pool environment prevents structural damage, lowers energy costs for cooling or heating, and improves the indoor climate to provide a comfortable swimming environment.[*citation needed*]

Some colleges, universities, and high schools have buildings that use the term "natatorium" in their names, especially when the building houses more than just a swimming pool, for example a diving well or facilities for water polo. The word *natatorium* was borrowed from Late Latin "place for swimming" into English in New England in 1890.[40][41]

Suspended swimming pool

[edit]

This type of swimming pool is suspended high above the ground. A prominent example is the Sky Pool in London's Embassy Gardens, the world's first floating pool.[42]

Other uses

[edit]

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Singapore Aviation Academy training pool for rescuing people on board aircraft in case of ditching

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An astronaut prepares to descend into a swimming pool as part of a training exercise.

Swimming pools are also used for events such as synchronized swimming, water polo, canoe polo and underwater sports such as underwater hockey, underwater rugby, finswimming and sport diving as well as for teaching diving, lifesaving and scuba diving techniques. They have also been used for specialist tasks such as teaching water-ditching survival techniques for aircraft and submarine crews and astronaut training. Round-cornered, irregular swimming pools, such as the Nude Bowl, were drained of water and used for vertical skateboarding.

Sanitation

[edit]
Main articles: Swimming pool sanitation and Swimming pool bacteria

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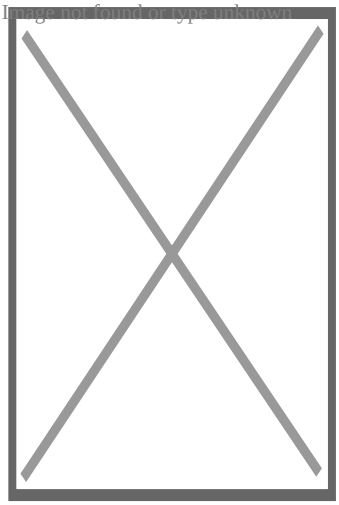

Automated pool cleaner

Levels of bacteria and viruses in swimming pool water must be kept low to prevent the spread of diseases and pathogens. Bacteria, algae and insect larvae can breed in the pool if water is not properly sanitized. Pumps, mechanical sand filters, and disinfectants are often used to sanitise the water.

Chemical disinfectants, such as chlorine (usually as a hypochlorite salt, such as calcium hypochlorite) and bromine, are commonly used to kill pathogens. If not properly maintained, chemical sanitation can produce high levels of disinfection byproducts. Sanitized swimming pool water can theoretically appear green if a certain amount of iron salts or copper chloride are present in the water.[43]

Acesulfame potassium has been used to estimate how much urine is discharged by swimmers into a pool.[44] A Canadian study estimated that swimmers had released 75 litres of urine into a large pool that had about 830,000 litres of water and was a third of the size of an olympic pool. Hot tubs were found to have higher readings of the marker. While urine itself is relatively harmless, its degradation products may lead to asthma.[44]

Covers

[edit]

Swimming pool heating costs can be significantly reduced by using a pool cover. Use of a pool cover also can help reduce the amount of chemicals (chlorine, etc.) required by the pool. Outdoor pools gain heat from the sun, absorbing 75–85% of the solar energy striking the pool surface. Though a cover decreases the total amount of solar heat absorbed by the pool, the cover eliminates heat loss due to evaporation and reduces heat loss at night through its insulating properties. Most swimming pool heat loss is through evaporation.[45]

Winterization

[edit]

In areas which reach freezing temperature, it is important to close a pool properly. This varies greatly between in-ground and above-ground pools. By taking steps to properly secure the pool, it lessens the likelihood that the superstructure will be damaged or compromised by freezing water.[46]

Closing vinyl and fibreglass pools

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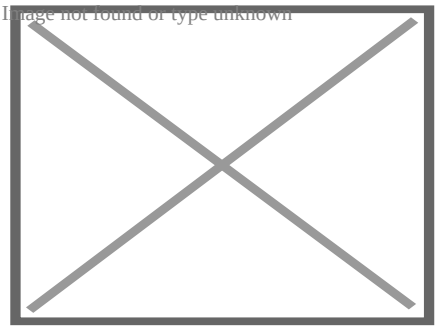


A rolled up pool cover, used to reduce water loss from evaporation and heat loss from the pool

In preparation for freezing temperatures, an in-ground swimming pool's pipes must be emptied. An above-ground pool should also be closed, so that ice does not drag down the pool wall, collapsing its structure. The plumbing is sealed with air, typically with rubber plugs, to prevent cracking from freezing water. The pool is typically covered to prevent leaves and other debris from falling in. The cover is attached to the pool typically using a stretch cord, similar to a bungee cord, and hooks fitted into the pool surround. The skimmer is closed off or a floating device is placed into it to prevent it from completely freezing and cracking.

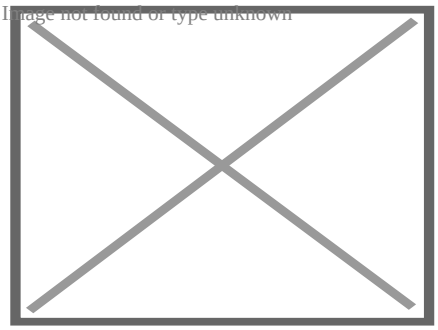
Floating objects such as life rings or basketballs can be placed in the pool to avoid its freezing under the cover. Sand or DE filters must be backwashed, with the main drain plug removed and all water drained out. Drain plugs on the pool filter are removed after the filter has been cleaned. The pool pump motor is taken under cover. Winter chemicals are added to keep the pool clean. The innovation of a composite construction of fiberglass, with an epoxy coating and porcelain ceramic tiles has led to the pre-form, composite-type with significant advantages over older methods; however, it also has increased sensitivity to metal staining.[*citation needed*]

In climates where there is no risk of freezing, closing down the pool for winter is not so important. Typically, the thermal cover is removed and stored. Winter sunlight can create an algae mess when a cover that has been left on all winter is removed. The pool is correctly pH-balanced and super-chlorinated. One part algaecide for every 50,000 parts of pool water should be added, and topped up each month. The pool should be filtered for one to two hours daily to

keep the automated chlorination system active.[*citation needed*]

Safety

[edit]



Lifeguard at a Hong Kong swimming pool

Pools pose a risk of drowning, which may be significant for swimmers who are inexperienced, suffer from seizures, or are susceptible to a heart or respiratory condition. Lifeguards are employed at most pools to execute water rescues and administer first aid as needed in order to reduce this risk.

Diving in shallow areas of a pool may also lead to significant head and neck injuries; diving, especially head-first diving, should be done in the deepest point of the pool, minimally 2.4 m (7 ft 10 in), but desirably 3.7 m (12 ft), deeper if the distance between the water and the board is great.

Pools present a risk of death due to drowning particularly in young children. In regions where residential pools are common, drowning is a major cause of childhood death. As a precaution, many jurisdictions require that residential pools be enclosed with fencing to restrict unauthorized access. Many products exist, such as removable baby fences. The evidence for floating alarms and window/door alarms to reduce the risk of drowning is poor.[47] Some pools are equipped with computer-aided drowning prevention or other forms of electronic safety and security systems.

Suspended ceilings in indoor swimming pools are safety-relevant components. The selection of materials under tension should be done with care. Especially the selection of unsuitable stainless steels can cause problems with stress corrosion cracking.[48]

Dress code

[edit]
Further information: Mixed bathing

In public swimming pools, dress code may be stricter than on public beaches, and in indoor pools stricter than outdoor pools. For example, in countries where women can be topless on the

beach, this is often not allowed in a swimming pool, and a swimsuit must be worn. For men, wearing ordinary shorts and a T-shirt to go in the water at a beach may be considered acceptable, but pools usually require real swimsuits or other dedicated water wear as swimming with regular clothes can potentially weigh a swimmer down should they need to be rescued. In France and some other European countries, board shorts are usually not allowed for "hygienic" reasons. In Nordic countries, in particular Iceland, rules about clothing and hygiene are especially strict.[49] When diving from a high board, swimsuits are sometimes worn doubled up (one brief inside another) in case the outer suit tears on impact with the water.

See also

[edit]

- Automated pool cleaner
- Bather load
- Lido
- List of water games
- Neutral buoyancy pool
- Pool fence
- Pool noodle
- Respiratory risks of indoor swimming pools
- Swimming pool service technician
- Uniform Swimming Pool, Spa and Hot Tub Code
- Urine-indicator dye

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External links

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Rooms and spaces of a house

Shared rooms

- Bonus room
- Common room
- Den
- Dining room
- Family room
- Garret
- Great room
- Home cinema
- Keeping room
- Kitchen
  - dirty kitchen
  - kitchenette
- Living room
- Gynaeceum
  - harem
- Andron
  - man cave
- Recreation room
  - billiard room
- Shrine
- Study
- Sunroom

Private rooms

- Bathroom
  - toilet
- Bedroom / Guest room
  - closet
- Bedsit / Miniflat
- Boudoir
- Cabinet
- Nursery

Spaces

- Atrium
- Balcony
- Breezeway
- Conversation pit
- Cubby-hole
- Deck
- Elevator
  - dumbwaiter
- Entryway/Genkan
- Fireplace
  - hearth
- Foyer
- Hall
- Hallway
- Inglenook
- Lanai
- Loft
- Loggia
- Overhang
- Patio
- Porch
  - screened
  - sleeping
- Ramp
- Secret passage
- Stairs/Staircase
- Terrace
- Veranda
- Vestibule

Technical, utility and storage	○ Attic ○ Basement ○ Carport ○ Cloakroom ○ Closet ○ Crawl space ○ Electrical room ○ Equipment room ○ Furnace room / Boiler room ○ Garage ○ Janitorial closet ○ Larder ○ Laundry room / Utility room / Storage room ○ Mechanical room / floor ○ Pantry ○ Root cellar ○ Semi-basement ○ Storm cellar / Safe room ○ Studio ○ Wardrobe ○ Wine cellar ○ Wiring closet ○ Workshop

Great house areas

- Antechamber
- Ballroom
- Kitchen-related
  - butler's pantry
  - buttery
  - saucery
  - scullery
  - spicery
  - still room
- Conservatory / Orangery
- Courtyard
- Drawing room
- Great chamber
- Great hall
- Library
- Long gallery
- Lumber room
- Parlour
- Sauna
- Servants' hall
- Servants' quarters
- Smoking room
- Solar
- State room
- Swimming pool
- Turret
- Undercroft

Other

- Furniture
- Hidden room
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- Multi-family residential
- Secondary suite
- Duplex
- Terraced
- Detached
- Semi-detached
- Townhouse
- Studio apartment

Architectural elements

- Arch
- Balconet
- Baluster
- Belt course
- Bressummer
- Ceiling
- Chimney
- Colonnade / Portico
- Column
- Cornice / Eaves
- Dome
- Door
- Ell
- Floor
- Foundation
- Gable
- Gate
  - Portal
- Lighting
- Ornament
- Plumbing
- Quoins
- Roof
  - shingles
- Roof lantern
- Sill plate
- Style
  - list
- Skylight
- Threshold
- Transom
- Vault
- Wall
- Window

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- Backyard
- Driveway
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- Garden
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- Home
- Home improvement
- Home repair
- Shed
- Tree house

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Ponds, pools, and puddles

Ponds

- Ash pond
- Balancing lake
- Ballast pond
- Beel
- Cooling pond
- Detention pond
- Dew pond
- Evaporation pond
- Facultative lagoon
- Garden pond
- Ice pond
- Immersion pond
- Infiltration basin
- Kettle pond
- Log pond
- Melt pond
- Mill pond
- Polishing pond
- Raceway pond
- Retention pond
- Sag pond
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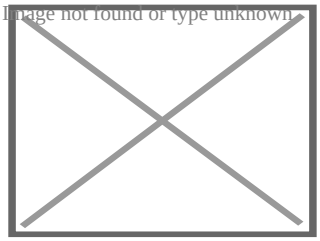
- Tailings
- Tarn
- Waste pond
- Waste stabilization pond



Pools

- Anchialine pool
- Brine pool
- Infinity pool
- Natural pool
- Ocean pool
- Plunge pool
- Reflecting pool
- Spent fuel pool
- Stream pool
- Swimming pool
- Tide pool
- Vernal pool

Puddles

- Bird bath
- Coffee ring effect
- Puddle
- Puddles on a surface
- Seep puddle

Biome

- Beaver dam
- Duck pond
- Fish pond
- Goldfish pond
- Koi pond

Ecosystems

- Aquatic ecosystem
- Freshwater ecosystem
- Lake ecosystem

Related

- Aerated lagoon
- Bakki shower
- Big fish–little pond
- Body of water
- Constructed wetland
- Full pond
- Hydric soil
- Phytotelma
- Pond of Abundance
- Pond liner
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- Water garden
- *Water Lilies* (Monet)
- Well

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4.6 (147)

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Driving Directions From Universal Turf Equipment to

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Reviews for Rock N Block - Turf N Hardscapes

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Terry lewis

(5)

Workers were great, no problem they did what was required, but the representative of your company mislead me on what was to be done, I showed pictures from a competitor landscaper, representative stated he could bet there , , . price, but since it wasn't in contract, I was left with uncomplicated backyard , working with owner at present, so he's been outstanding working on this situation, as amount of rock was way off and the owner did increase the amount substantially to finish the front yard. another landscaper under contract to finish the backyard. Would like to add a comment the manger/owner of Las Vegas yard n block stands behind his words and helped me tremendously on finishing up the backyard,

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Josh Bodell

(5)

Eric and team did an amazing job. They worked with me for months while I got HOA approval for the project. Once they began working they were great, going over everything in detail and making sure things were perfect. This project included wall repair, stucco and paint repair, paver and turf installation. Extremely satisfied with this experience.

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Shana Shapiro

(5)

Chris, the design consultant, Dave the production manager, along with their install team Opulent were affordable, upfront with costs, efficient and professional. Attached are some before and after pictures. Highly recommend their services.

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Dawna OgleYohe

(5)

My initial contact was with Ray, whom did an excellent job giving me an estimate on what I wanted done in my small yard and walkway., the guys that came out and did the work were superior. They did an excellent job. I’m very pleased with this company. I will highly recommend them to family and friends, and I will be using them in the near future for other little projects.

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Things To Do in Clark County

Photo

Clark County Historical Museum

4.6 (147)

Driving Directions in Clark County

Driving Directions From NV Landscapes LLC to

Driving Directions From Ugarte Landscapes & Irrigation Repair to

Driving Directions From New horizon landscapes to

Driving Directions From Custom Touch Landscape to

Driving Directions From A and L Desert Landscapes Tree Company to

Driving Directions From Paradise Landscaping Las Vegas to

Driving Directions From Las Vegas Backyards to

Driving Directions From Delfino Maintenance & Landscaping Inc. to

Driving Directions From Rock N Block - Turf N Hardscapes to

Driving Directions From Las Vegas Tree & Landscaping to

Driving Directions From Living Water Lawn & Garden to

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Driving Directions From Clark County Historical Museum to

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Reviews for Rock N Block - Turf N Hardscapes

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D. Lopez

(5)

We recently had a very positive experience with Rock N Block for our fence replacement. The entire process went smoothly and exceeded our expectations. Harvey and his team were incredibly professional and communicative throughout the project providing much-needed assurance and peace of mind. The crew was punctual and maintained a diligent and respectful attitude that made the experience pleasant. The crew finished the project ahead of schedule, and the quality of their work is impressive; our new wall looks great! We recommend Rock N Block for any fencing needs and look forward to working with them again. Thank you, Harvey and crew, for a job well done!

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Terry lewis

(5)

Workers were great, no problem they did what was required, but the representative of your company mislead me on what was to be done, I showed pictures from a competitor landscaper, representative stated he could bet there , , . price, but since it wasn’t in contract, I was left with uncomplicated backyard , working with owner at present, so he’s been outstanding working on this situation, as amount of rock was way off and the owner did increase the amount substantially to finish the front yard. another landscaper under contract to finish the backyard. Would like to add a comment the manger/owner of Las Vegas yard n block stands behind his words and helped me tremendously on finishing up the backyard,

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Dawna OgleYohe

(5)

My initial contact was with Ray, whom did an excellent job giving me an estimate on what I wanted done in my small yard and walkway., the guys that came out and did the work were superior. They did an excellent job. I'm very pleased with this company. I will highly recommend them to family and friends, and I will be using them in the near future for other little projects.

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Shana Shapiro

(5)

Chris, the design consultant, Dave the production manager, along with their install team Opulent were affordable, upfront with costs, efficient and professional. Attached are some before and after pictures. Highly recommend their services.

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Josh Bodell

(5)

Eric and team did an amazing job. They worked with me for months while I got HOA approval for the project. Once they began working they were great, going over everything in detail and making sure things were perfect. This project included wall repair, stucco and paint repair, paver and turf installation. Extremely satisfied with this experience.

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Frequently Asked Questions

What are the benefits of installing artificial grass?

Artificial grass provides a lush, green lawn year-round with minimal maintenance, reduces water usage, and is durable under various weather conditions.

What are the benefits of artificial turf in Las Vegas landscapes?

Artificial turf saves precious water, cuts down on fertilizer or pesticide use, and requires no mowing—ideal in a desert city. It stays green year-round despite scorching summer highs. Many modern turf products feature realistic textures that mimic natural grass, making them family- and pet-friendly. With proper installation—like ensuring efficient drainage and a smooth sub-base—synthetic lawns can last years with minimal upkeep. Pairing artificial turf with surrounding gravel or drought-tolerant plants creates visual contrast and reduces the “heat island” effect. While initial costs may be higher, homeowners often recoup that investment quickly by slashing water bills and maintenance routines.

What services does Rock N Block Turf N Hardscapes offer?

Rock N Block provides comprehensive solutions including artificial turf supply and installation, hardscaping services, paver installation, retaining walls, outdoor living spaces, and more.

How do I choose the right landscaping designer in Las Vegas?

Begin by checking portfolios to see if a designer's style resonates with you—some focus on modern rockscapes, while others excel in lush desert gardens. Ask for references and read online reviews from past clients. Confirm they understand desert-friendly concepts like drip irrigation, suitable plant species, and local water restrictions. It's helpful if they have experience navigating HOA rules or city permits. Request detailed estimates outlining costs for plants, irrigation, and labor. A trustworthy designer will listen to your needs—like budget constraints or favorite colors—and propose feasible solutions. Look for open communication and transparent timelines, ensuring a smooth path from initial concept to a vibrant, low-water yard.

How can I conserve water while keeping my yard attractive in Las Vegas?

Start by practicing **xeriscaping**—selecting native or desert-friendly plants, then organizing them into zones based on watering demands. Swap water-heavy turf for artificial grass or decorative rock and limit any remaining lawn areas to spaces you truly use. Install drip irrigation lines to deliver moisture directly to roots, minimizing evaporation. Add mulch or gravel around plants to help the soil retain water. Smart irrigation controllers detect weather changes and adjust schedules automatically, avoiding wasted runoff. Lastly, consider strategic shade via pergolas or drought-tolerant trees to reduce heat stress on plants. These measures collectively maintain a vibrant look with far less water.

landscape maintenance Las Vegas

Landscaping Designer Las Vegas

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City : Las Vegas

State : Nevada

Zip : 89108

Address : 3267 N Torrey Pines Dr

Google Business Profile

Google Business Website

Company Website : https://rocknblocklandscape.com/artificial-turf/landscaping/

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