



# GREAT IDEAS FOR OUTDOOR MUSIC, VIDEO AND HOME AUTOMATION

- Outdoor audio/video system planning tips.
- Can your backyard be a smart backyard?
- What's the best subwoofer for your outdoor music system?
- Professional installers share their outdoor A/V knowledge.

# BEST WAYS

Tips and Trends:  
outdoor audio,  
video, lighting  
and automation

## to Automate your Backyard or Outdoor Living Space

Outdoor living spaces are hot. According to reports by the National Association of Home Builders, the lines between the indoors and outdoors are becoming increasingly blurry, as home builders and buyers are incorporating and demanding functional, comfortable exterior living spaces with many of the same high-tech conveniences normally reserved for the interior spaces of a home. Here are six smart electronic amenities that can turn a standard backyard into a sensational spot for relaxing, entertaining and even catching the latest blockbuster on a big-screen TV.

**1. Intelligent outdoor lighting.** Think beyond traditional timers as a means to control your home's exterior lighting. When tied to motion sensors, architectural lighting control systems and automation systems, the landscape fixtures, floodlights, sconces, swimming pool lights, even gas Tiki torches can be designed to light pathways through gardens, accentuate a home's unique architectural and landscape features, add ambiance to patios and decks and create an atmosphere that's elegant and inviting.

**2. Smart swimming pools and hot tubs.** Imagine being able to warm up the hot tub on your drive home from work from your smartphone. It's possible with a few extra pieces of technology. Many swimming pool manufacturers offer their own downloadable apps to facilitate monitoring and control of the swimming pool system from anywhere. For greater effect, the swimming pool and hot tub can be synchronized with the outdoor lights and speakers (see suggestion #6).

**3. Weather-hardy TVs.** It's like a drive-in movie theater ... only better, when you add a TV to the deck or patio. A wide variety of flat-panel TVs are available that have been engineered to withstand extreme heat and cold, so there's no need to worry about damaging your electronics investments. Video switchers will enable the outdoor display to share A/V components (Blu-ray players, DVRs, Apple TV, etc.) with the indoor TVs.

**4. Landscape loudspeakers.** Positioned strategically throughout the yard (contact a custom electronics professional for advice), loudspeakers can blanket the area with beautiful music. For the best



listening experience connect the speakers to a whole-house music system. This way, you can select a source (media streamer, satellite radio, Internet radio, iTunes collection, etc.) from a smartphone or tablet and direct the tune to specific areas (including indoor spaces). The speakers can also be set up to emit a chime when someone rings the doorbell to notify you of guests.

**5. Surveillance cameras.** We're not suggesting you turn the outdoor area into Fort Knox, but by aiming surveillance cameras at the swimming pool, perimeter of the yard and other areas that you feel like keeping an eye on, you can rest easy knowing that your property and family are safe. While you're inside the house, at work or on vacation, you can grab your smartphone or tablet to view the scene from any and all cameras. If you've invested in a home automation system (see suggestion#6), you'll be able to have the electronic devices react accordingly, like having the outdoor lights flash to scare raccoons from the trash bin or having the outdoor speakers broadcast a warning to the kids to stay in the yard.

**6. Automated conveniences.** Maintaining a yard is hard enough, so don't let technology make it even harder. An automation system can simplify the operation of every single electronic system you decide to incorporate into the outdoor living space: audio, video, lighting, security, swimming pool, etc. Instead of controlling each amenity individually, you can consolidate the control of all devices and systems into a single button press. For example, a Party button could simultaneously activate certain lights, a specific zone of music and the hot tub. Night Time, on the other hand, could issue a command that sweeps through the entire area to turn everything off.

# Planning your Outdoor **AUDIO AND VIDEO SYSTEM**

Once the chill of winter is behind us, many people step out of the dark caves of their home theaters and into the sunlight—in their backyards.

As any realtor or home remodeler will tell you, the backyard (or deck, patio, etc.) is the new favorite place for entertaining, relaxing and enjoying friends and family. Just look at the growth of the landscaping and outdoor kitchen business as proof. But what happens when you bring all your party guests over for some grilling, swimming and chillin, but all of the cool AV gear is inside the house?

Outdoor entertainment systems are popular, and very practical. They're used frequently (depending on your climate, of course) and bring a lot of ROI in terms of enjoyment. We spoke with Consumer Electronics Pro Steve Hunter of the Hunter Group for tips on planning an audio/video paradise of your own.

## Getting the Best Sound

Let's start with outdoor speakers. The market is flooded with inexpensive portable Bluetooth audio systems that have replaced the boomboxes of the past, but while they're convenient, they're a big letdown if you're going from a killer indoor audio system to a couple of cheap drivers in a shoebox for the backyard.

Instead you should fill your outdoor space with quality outdoor speakers. There's a variety of styles available, from in-wall/in-ceiling models (good for lanais and covered patios), wall-mountable models (popular for hanging under a home's eaves) to rock-shaped speakers and in-ground speakers.

Speaker placement in a backyard or outdoor space can be trickier than in a living room or home theater. Outside sound travels and can either travel far, into the yard next door, or not far enough so you may only get sound in localized spots. "Placement really needs to be thought out carefully," says Hunter. "You want the sound to be even across the whole area." He notes that in the west Los Angeles area where his business is, yards and patios can be small, so he needs to be careful about where the speakers are projecting. "Typically, I'll put a set of speakers at the back of the yard on a wall [if the yard has a wall] so they're facing toward the house, and put a set on the patio under the eaves," he explains. This way the sound is focused toward the living area of the yard and not simply blasted out into the neigh-



borhood. For larger yards he uses speakers that look like landscape lights. He places them roughly in a circle pointing toward the listening area so that everyone can hear at the same volume. Because low frequencies produce very large sound waves, they tend to dissipate quickly, so Hunter also recommends a subwoofer to fill in the sound. Subwoofers that can be partially buried are a good option.

People understand the need for separate audio zones in a home, but in the backyard? Yes, multiple audio zones can be very helpful, even in outdoor spaces that aren't very big. Hunter recently did an installation that includes a pool area, a cooking/BBQ area and a lanai (which includes an outdoor TV, which we'll get to later). This entire yard could easily be filled with sound all at once, but what happens when not everyone wants to hear the music at the same level. Kids in the pool might want to turn up the volume to play over their own screaming, while the people at the BBQ or lanai want to tone it down to conversational levels. Speaker placement also comes into play, here. If one seating area is closer to the speakers than another, someone's going to be blown away with music while another person keeps cranking it up. Being able to control the volume and audio sources independently makes the yard more enjoyable for all.

### Outdoor TVs

When I was a kid, my father would occasionally drag out a portable TV with built-in rabbit ears, plus an extension cord, so he could watch a baseball game on the back deck on a nice summer night. Today there are much better ways to bring video outside.

First, you need the right TV and this means an outdoor TV. TVs designed to withstand the rigors of the untamed world are made by SunBriteTV, Seura and other companies. While outdoor HDTVs certainly cost more than standard TVs, Hunter says they're worth the price. "People may want to buy a cheap TV and put it on a patio," he says, "but eventually they get tired of replacing them."

Outdoor TVs are weather resistant, which means you don't need to worry about rain and snow. Even if your patio is covered, it only takes a little rain blown in by wind or a squirt of a hose by the gardener to ruin a standard TV. Even high humidity, especially with salty ocean air, can damage a TV that's not built to withstand the elements.

Aside from getting the right TVs, placement is an important factor. When you're outside you have the sun to deal with, and the sun's position changes throughout the day. "I almost always put outdoor TVs on full articulating mounts," says Hunter. If there's only one TV in the area, he wants the mount to be adjustable so the screen is viewable from multiple locations.



Just like in home theaters, screen size is a factor. With an outdoor TV, viewers are often seated further away from the screen than they would be indoors. Anything smaller than a 46-inch TV is probably too small unless you're certain that the viewers will always be close to the screen.

Most outdoor TVs come with built-in speakers, just like regular TVs, but frequently Hunter will use external speakers for the TV audio. First, external speakers will sound better, and they can be part of a zoned audio system. If you're having a pool party during a baseball game you can play the TV audio on speakers all around the yard.

### Outdoor Lighting

A well-designed outdoor lighting plan can turn a plain yard or patio into a special retreat. Hunter recommends multiple lighting zones in a yard, as well as multiple scene settings designed for different purposes—such as a party mode or a relax mode. Pathway lighting is useful for getting around late at night without tripping over things. If you frequently have guests over for evening events then pathway lighting is a must.



### Outdoor Network

Home networks have become a valuable part of in-home entertainment and control. The situation is the same outdoors. The problem homes can face is that Wi-Fi routers are often buried in the center of a house, so the signal has trouble reaching outside, especially if there's a large yard. Outside Wi-Fi is important because the most common devices used to control audio, video and lighting systems are smartphones and tablets. If your iPhone can't connect with the control system, then you can't turn the music up. It's also a good idea to set up a guest network so people spending the afternoon at your cookout can log on to easily check their email or post party pictures to Facebook.

Hunter says that for one project that included a 3-acre yard he installed multiple Wi-Fi antennas around the outside to ensure that every inch was covered.

### How to Plan

Hunter says that if you want to turn your backyard into more than just a place for the dog to wet the grass, then some early planning helps a lot. Just as with home integration, pre-wiring is crucial for outside systems. If you're having landscaping work done, call in your integrator before the pavers have all been placed. Be sure that sizable conduits are trenched under sidewalks and to all ends of the yard. Plan for speakers, lights and network connectivity everywhere, even if the immediate plans don't call for so many devices. It's easier, and in the long run cheaper, to wire first then add more devices

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# Pro Tips

## for Setting Up an Outdoor Audio and Video System

So you want audio and video in your backyard?

Fair enough, although it's not as simple as hooking up a TV and some speakers. Maybe you'd also like to control that outdoor system from a handheld remote ... and control the swimming pool system, and automate the sprinkler system, and trench wire out to the cabana for a home theater.

Suddenly, this has turned into quite a project.

First order of business: Find waterproof and weatherproof electronics—there's a difference. Do this unless your electronics are going to be very well protected from the elements, such as located inside a roofed cabana or closed-in patio. Second order of business: Plan ahead. Know how your outdoor gear is going to be wired. You can always let your custom electronics (CE) pro handle it, or you can read these tips and wield your own shovel and wire stripper.



### VIDEO IN THE SUN

1. Place your TV somewhere where it's protected from the weather, as well as from dirt, moisture and insects. This is especially important if your outside area is exposed to salty ocean breezes.
2. Use a TV meant for the outdoors. "Products from SunBriteTV, Seura and Pantel keep condensation (and insects) out of the TV and are very specialized to last," says Josh Christian of Southern California-based DSI Entertainment Systems.
3. Minimize glare by placing your display in a shaded area. Use an LCD TV instead of a plasma-based model, which is more susceptible to glare (all outdoor-rated TVs are LCD).
4. Even with a weatherproof TV, try to install it under an overhang, in custom cabinetry or behind a glass enclosure. A custom cabinetmaker can work with your CE pro to add watertight rubber seals around doors and to pressure-treat the wood.

5. Want an outdoor projection setup? Motorized drop-down screens or inflatable ones can be used with a carefully housed or portable projector for after-dusk viewing. You may still want a bright LCD TV for daytime viewing, though.
6. Position a projection screen where it can be rolled up and put away when it's not being used, suggests Erich Allen of EAG Design in Kingsport, Tenn. Tucked into a soffit, for example, it will be protected from the elements and raise no visual distractions with the landscape.
7. Consider installing a weather meter indicator, so if conditions get too breezy the screen will retract automatically into its housing (also requires a home automation system).

### AUDIO ALL AROUND

8. For audio, think in terms of coverage, not loudness. What you want is even coverage throughout the outdoor area, without any hot spots or dead spots. "The best way [to accomplish this] is to use a lot of smaller speakers," explains Neal Edmiston, co-owner of Southern California-based Vision Systems Automation.
9. Position the speakers so that they're firing toward the house. You'll get better sound coverage, and you'll be a better neighbor. Plus, when the speakers are placed away from the house, they won't conflict visually with your home's design and architecture. Blend the speakers into the landscape by choosing models that resemble rocks, planters and other backyard objects.
10. Need more bass? Complement your outdoor speakers with in-ground subwoofers. "What's great about the in-ground sub is that only part of it sticks out. This allows us to put smaller, more inconspicuous speakers in other spots," that a subwoofer might otherwise occupy, Edmiston says. And know the difference between waterproof and weatherproof, especially when it comes to speakers. Waterproof speakers are design to stand up against a summer storm and poolside horseplay. Weatherproof products, on the other hand, will be able to withstand many other conditions, such as drastic changes in temperature.

### COMPONENTS AND WIRING

11. Locating and wiring source components to an outdoor video display can be a major challenge. The first rule of thumb is to try to keep as much of the gear inside the house as possible, preferably in a central equipment rack.
12. Work with the home or landscape architect early on so conduit and electrical cabling can be trenched into the ground. Ask for multiple 2-inch conduits or larger.
13. Run all outdoor cabling through conduit. This will protect it from rodents and garden tools.
14. Even if you'll be using conduit, always use direct-burial cables.
15. It's always a good idea to separate power and A/V cables. Run two or three conduits to accommodate all types of cables and to future-proof your outdoor area.
16. The length of outdoor cabling can cause problems. "You really have to think about what the distance will do to the audio, video and control signals," says Curt Hayes of Audio Design in Deerfield Beach, Fla.
17. Wiring runs often can't be completed at rough-in, so look to "stub out" cable bundles to a weath-



erproof, surface-mounted box where connections can be made later.

**18.** Run 14/4 speaker cabling between the source components and an outdoor junction box with a cover plate. Use direct-burial cabling from the box to the speakers.

**19.** RG-6 and Category 5 Ethernet cabling are safe bets for all other outdoor equipment. Dedicate an individual Cat 5 for each audio, video and control path or two shielded Cat 6 for an HDMI extension.

**20.** Some CE pros add fiber-optic cabling for HDMI, especially when the run is over 100 feet. Hayes says it's less expensive and has become easier to terminate, but he warns not to run it in lieu of Cat 5 (just in addition to).



Outdoor control touchscreen installed by Sound Concept

### CONTROL IN PARADISE

**21.** Rule number one: Don't bring the remote control near the pool. Rule number two: Always, always, obey rule number one. The exception is if you use a waterproof remote like the ones made by URC or Crestron. Since many people are now using their smartphones and tablets as the control interface, take special care that those don't get wet or lost.

**22.** If you're using your smartphone or tablet as your control interface, make sure you have a strong Wi-Fi signal outside so your control device can connect to the network.

### POOL CONTROL & IRRIGATION SYSTEMS

**23.** If you have a swimming pool ... and a home control system, think about tying the two together. This way, the operation of the pool system can be synchronized with the settings of the outdoor lights, music and video.

**24.** Consider adding a pool alarm, especially if you have children. Mark Ontiveros of Tustin, Calif.-based Audio Images looks to SonarGuard products to provide peace of mind for clients with kids. Control touchpanels around the house can be triggered by SonarGuard annunciators to alert homeowners "very loudly that 'a child is in the pool.'"

**25.** Ask your CE pro to integrate your irrigation system with your home control system. Right from a home control keypad or touchpanel, or remotely from a phone, you'll be able to view the status of the sprinkler system and adjust the settings if necessary.

# Outdoor Subwoofers for your **OUTDOOR MUSIC**

When it comes to the winter, many of you are ready to rock at a moment's notice. Most likely, you have speakers sprinkled throughout the house. However, what happens when the weather warms up and you actually want to step outside?

With Old Man Winter officially on hiatus, and sunshine, warm temperatures and the smell of barbecued meats wafting through the air, you'll likely be lured to the backyard, the deck and/or the pool area. Those smells can be awesome. They just aren't



all that entertaining—at least, not for very long. If you entertain outdoors, outdoor speakers are a must.

Outdoor speakers come in several shapes and sizes, with several different price tags. We've covered plenty of those before. However, if you want to put a little oomph into that sound, consider an outdoor subwoofer.

An outdoor subwoofer can pack the same punch as an indoor subwoofer. The big difference here is that it needs to be able to withstand the weather, insects and other critters. Unless you like carrying heavy audio equipment back and forth, it needs to be able to live outside. Several manufacturers make several subs that can rock in the great outdoors—and some look like actual rocks! Currently, there are two main types of outdoor subwoofers:

- ◆ In-Ground: These options allow you to bury the bulk to the speaker underground.
- ◆ Rocks and Planters: This option can blend that sound in with the outdoor scenery.

When it comes to outdoor speakers and subwoofers, placement is really important. After all, you aren't just trying to fill the backyard, you're also competing with sounds from neighbors and nature. However, you also want the sound to be distributed evenly. To make beautiful music in the outdoors, the subwoofer needs to match your receiver and your speakers. Yes, you'll need a dedicated receiver or at least one that can handle a second zone. Also, consider your climate. Sure, all outdoor speakers should be able to withstand the elements. However, if you live in an area with brutal climate conditions, make sure that your outdoor subwoofer is up to the task.

## 10 Outdoor Subwoofers for Backyard Bass



### Polk Atrium Sub10

Looking like a perfect spot for some shrubbery, Polk's outdoor option packs bass into a cabinet that can hold your plants or your drinks. Packing a 10-inch long-throw Dynamic Balance driver, this 200-watt downward-firing subwoofer promises a bass response down to 50Hz. Other features include Capacitive Coupling Technology, as well as a security anchor and screw-down points so it won't topple over. It even has a paintable surface to match the outdoor landscape or your favorite lounge chair. An optional grille is also available.

**MSRP:** \$299.95

**For More Information:** Polk

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### Crestron AIR

Designed to get the party (and the ground) shaking, this in-ground sub has a built-in 70/100-volt transformer and 8 ohms nominal impedance. It also has two 8-inch low-frequency drivers underground and covers them neatly with a textured portal cap. Other features include 200 watts of power handling and a 22-120Hz frequency range.

**MSRP:** Contact your local dealer

**For More Information:** Crestron

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### SpeakerCraft Boomtomb

This is another option designed to shake the ground from down below. Just bury this waterproof enclosure wherever you want to rock and the long excursion 10-inch woofer will take care of the rest. The only exposed element is the sub's hooded port, which vents the system. Other features include a dedicated 250-watt amplifier, a sensitivity rating of 90dB, and a frequency response from 30-200Hz.

**MSRP:** \$549

**For More Information:** SpeakerCraft

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### OSD Audio RSUB300

Are you ready to rock with an actual rock? This option will disappear into the landscape, without having to be buried. Rated at 500 watts, this speaker stuffs a 10-inch reflective woofer, an 8-inch woofer and a 10-inch injection molded cone woofer with Dupont surround into a realistic looking rock enclosure. Other features include a frequency response of 20-150Hz ( $\pm 6$ dB) and a sensitivity rating of 90dB, as well as brown and grey color options.

**MSRP:** \$114.99

**For More Information:** OSD Audio



### Niles GSS10

Because this in-ground option can be buried 16 to 18 inches down below, it easily disappears into the landscape. Not to worry; you'll know it's there. It can pack a mighty wallop with a 10-inch mineral-filled polypropylene woofer that can output frequencies from 25-110Hz and up to 110dB. Also worth mentioning is that this sub can withstand temperatures from 15 to 160 degrees Fahrenheit, so it can hang outside even when you can't.

**MSRP:** \$699.95

**For More Information:** Niles

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### Rockustics SubSub

The last of our in-ground subwoofer options comes in 10-, 12-, and 15-inch configurations. It has a cylindrical structure that's made of proprietary resin composite, so it won't break down over time. Oh, and it's also fully weatherproof. It even has a little cover that can disguise the subwoofer's output tube, so it won't look like something scary that you tried to dispose of in the yard. Those covers come in three standard colors, with custom options available.

**MSRP:** Starts at \$1,390

**For More Information:** Rockustics

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### Earthquake Sound Granite-10D

Earthquake wants to be one with Mother Nature. However, this rock can rock out by the patio, the pool, the birdbath, or wherever else you want it. The Granite-10D has a 10-inch woofer and two 2-inch voice coils. Made with a UV-treated, weather-resistant enclosure, it also has an S-shaped port, so water can't get trapped inside. Other features include a frequency response of 30-100Hz ( $\pm 3$ dB), a sensitivity rating of 92dB, and a granite finish.

**MSRP:** \$699

**For More Information:** Earthquake Sound

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### Terra Speakers AC.SUB

Technically, this model isn't an in-ground subwoofer. It's designed to be partially buried. And if you think that a bunch of critters will start calling the exposed part (or any other part) home, think again. The AC.SUB is totally sealed, so nothing can get in—not even moisture. Featuring a 12-inch cast frame driver with a 2-inch edge-wound voice coil and a ceramic-aluminum-ceramic “sandwich” cone, Terra recommends 250 watts (RMS) to drive this big boy properly. Made entirely in the U.S., the AC.SUB is also available in black and green to match your backyard scheme.

**MSRP:** Contact your local dealer

**For More Information:** Terra Speakers

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### Sonance SonArray SR1

Sonance's latest outdoor sub is part of a larger package—a much larger package (pictured). The SR1 has eight satellite speakers and an in-ground subwoofer to rock up to 2,000 square feet of outdoor space. If you're looking for a slightly smaller purchase, the company's SLS line is designed to be used with Sonance's Landscape Series satellite speakers, but can be purchased separately. The three in-ground models include the 10-inch LS-10SUB, the 12-inch LS-12SUB, and the dual voice coil 15-inch LS-15SUB. There's also the 10-inch HS-10SUB, which can be built into patio furniture or planter boxes.

**MSRP:** Starts at \$2,500 each

**For More Information:** Sonance



### TruAudio RK-SUB

Designed to match TruAudio's RK speaker series, this final rock option has a 10-inch injected poly-woofer inside. It needs a sub amp (such as TruAudio's TRU-S3) to power up to 250 watts at 90db, and boasts frequencies down to 36Hz. Other features include a four-layer voice coil, 4 ohms impedance, and a sealed resin cabinet to prevent corrosion and insect infestation.

**MSRP:** Contact your local dealer

**For More Information:** TruAudio

# JANDY & ELAN

## Pair up in Backyard Automation and Audio/Video Paradise

Integration of two systems lets homeowners operate their swimming pool and audio system from one iPad app.

The Jandy system that operates the swimming pool, fountains and waterfall for a 50-foot slide is smart all on its own, but by putting it under the control of an Elan g! system, the owners of this extensive backyard renovation are able to integrate the water effects with audio and video conveniently from a single iPad app.

Already familiar with the benefits of using a single control system to operate their home theater and whole-house audio system, the decision to incorporate the electronics of the outdoor area was a given, says John Goldenne, a custom electronics (CE) professional from Digital Home Technologies, the Palatine, Ill.-based company hired to extend the A/V and control systems to the backyard.

The homeowners were happy with the audio and video options available to them from inside the house—with the recent addition of a Fusion Ovation music streamer—so Digital Home Technologies pulled cabling from the home’s central rack of A/V gear to the planned locations for two outdoor 55-inch SunBrite TVs and two zones of weather-hardy speakers, which includes Sonance Sonarray speakers (eight satellite speakers and one below-ground subwoofer) around the swimming pool and a pair of SpeakerCraft OE8 speakers mounted by the Sunbrite TV under an arbor. Wiring was also added to connect the Jandy pool controls to the Elan g! home control processor. Tucked behind the home’s gutter and trenched into the yard, the cabling, although extensive, is imperceptible.

The homeowners can use a wall-mounted keypad inside the house or their iPad to direct music and video from the inside of the house to the outside. By scrolling to a “pool page” designed by Digital Home Technologies, the owners can operate the swimming pool and other water features as if they were standing in front of the Jandy controls.



Photography by Scott M. Fincher

If you're interested in learning more about home automation, indoors or out, check out these useful resource sites:

Find an Installer: Locate a professional in your area who can set you up with your dream system.  
<http://residential.findinstallers.com/findinstallers/installers>

Electronic House Learning Center:  
Helpful articles on a variety of home tech topics.  
[http://www.electronichouse.com/topic/tag/Learning\\_Center/](http://www.electronichouse.com/topic/tag/Learning_Center/)

Electronic House Coolest Homes:  
Inside looks at the best integrated homes and backyards offered for your inspiration.  
<http://www.electronichouse.com/coolhomes>