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Ms. Kate Gordon  
Director,  
Office of Planning and Research  
1400 10th Street  
Sacramento, CA 95814

*Via Email: [California.Jobs@opr.ca.gov](mailto:California.Jobs@opr.ca.gov)*

Opposition to Certification of the Inglewood Basketball and Entertainment Center Project under AB 987 (Application No. 2018021056)

Dear Ms. Gordon:

On behalf of Inglewood Residents Against Takings and Evictions (“IRATE”), we object to certification of the Inglewood Basketball and Entertainment Center Project (“Project”) pursuant to AB 987. The Project does not meet AB 987’s requirements. As proposed, the Project will lead to increased traffic congestion, pollution, and emission of greenhouse gases in Inglewood, directly and negatively impacting the health and well-being of the community and IRATE’s members. Perhaps more importantly, the methodology used by the applicant, if accepted by the California Air Resources Board (“CARB”) and the Governor, undermines compliance with the State’s established Greenhouse Gas (“GHG”) goals and established methodologies of air districts. This sets a very dangerous precedent for the entire state. IRATE opposed passage of AB 987 because of its potential harmful effects on the local community. Those concerns are now being realized as AB 987 is being implemented.

AB 987 requires a Project certified under its authority meets rigorous environmental standards. The applicant has failed to adequately describe how the Project will meet those standards required by AB 987 and therefore, the certification should be denied.

There are a number of reasons the application cannot be certified.

**A. The Project Results in an Increase in GHG Emissions.**

Public Resources Code § 21168.8 subdivision (b)(3) requires that the project not cause a net increase in GHGs. To demonstrate net zero GHG emissions, the applicant must show that future Project emissions, minus baseline emissions, minus mitigation measures, equal zero. The applicant manipulates the baseline emissions level to decrease the amount of emissions it must mitigate. This “methodology” runs counter to CEQA and every well-respected air emissions methodology on the books.<sup>1</sup> If accepted by the Air Resources Board (ARB) it will create a precedent that will undermine achievement of the State’s GHG reduction standards, and established policies of air agencies.

The applicant’s GHG baseline includes the GHG emissions now attributable to its games played at the Staples Center. (Application, Attach. G, pp. 6-7.) The application then takes credit for effectively eliminating, not just relocating, its GHG emissions from its existing operations at Staples Center. This is wrong and unsupportable under CEQA, since Staples Center will continue to operate. The applicant effectively assumes (with no supporting evidence) that nothing will replace the Clippers games currently taking place at the Staples Center, which account for 21% of Staples Center emissions. (Application, Attach. G, p. 9.) The applicant acts as though its move out of the Staples Center is equivalent to demolishing or permanently restricting the capacity of 21% of a refinery or

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<sup>1</sup> Existing conditions on the ground at the Project site consist of a hotel, restaurant, commercial building, and light industrial buildings. (Application Attachment G, p. 7.) These are the source of the GHG emissions that should be included in the baseline. Existing conditions do not, and should not, include GHG emissions from other facilities such as the Staples Center, Honda Center, and others that the application includes. The Supreme Court in *Communities For A Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310 (“*CBE*”) explained in detail how a baseline is to be determined. The Court stated: “To decide whether a given project’s environmental effects are likely to be significant, the agency must use some measure of *the environment’s state absent the project*, a measure sometimes referred to as the “baseline” for environmental analysis.” (*CBE, supra*, 48 Cal.4th 310, 315, emphasis added.) The Supreme Court has thus held the appropriate baseline is “the physical *conditions actually existing at the time of analysis*.” (*Id.* at 316, emphasis added.) The Supreme Court quoted various cases stating actual conditions at the time of analysis must be the baseline for analysis: “the baseline for CEQA analysis must be the “existing physical conditions in the affected area” ([citation]), that is, the “real conditions on the ground.”” ([citations].) (*CBE, supra*, 48 Cal.4th at 321.)

power plant (in this case Staples Center), in order to take credit for eliminating that portion of its emissions. This is, of course, absurd, and unsupported by any proof.

The departure of the Clippers from Staples Center cannot be shown to result in any physical reduction in Staples's capacity to cause GHG emissions, or any reduction in its operating capacity. Staples Center will continue to fully operate and will attempt to book new events for those dates, replacing the GHG emissions from the Clippers' games with emissions from new events to a currently unknown degree, perhaps 100%. The applicant has not, to IRATE's knowledge, secured a covenant from Staples that it will permanently reduce its capacity by 21% to account for the departing Clippers games, nor could that reasonably be expected. The operating capacity of Staples will not be reduced in any manner, and the only reasonable assumption is that it will continue to be used, perhaps fully used, with corresponding GHG emissions.

In addition, the applicant assumes that about half of the non-basketball events to be scheduled at the IBEC facility would be "market-shifted" from other event facilities, such as the Honda Center, and that the GHGs now generated by those events would be eliminated, not just relocated; the application assumes that these events will never be replaced by any other events at those other facilities. (Application Attach. G, pp. 9-10.) The applicant does not show that it has secured any permanent reduction on operating capacities of these facilities, nor is there any evidence that these events will, in fact, relocate from Staples, Honda Center, the Forum or any other venue to the new Clippers arena, or that the GHG emissions they cause will actually be eliminated. The application simply assumes that events will shift from existing event facilities to IBEC, and that no such shifted events will be replaced by new ones. The application, in essence, assumes a zero-sum total of GHG emissions from events in the Los Angeles area of the types that the IBEC facility would serve; if these events move to IBEC, no additional events will occur to replace them. The assumption that existing facilities serve every possible event of this kind, and that building a new facility (here, the IBEC) will not and cannot lead to the occurrence of additional such events, is not supported by evidence in the application, and therefore cannot be taken at face value. The application has not made the required case for these GHG reductions.

The application's baseline methodology asserts that over 300,000 tons of CO2 emissions will simply disappear when the Project is built. (Application Attachment G, p. 25.) Because they "disappear," the applicant asserts it does not need to offset those emissions. This, of course, is a fallacy. Those emissions are simply relocated, not eliminated. As an analogy, imagine the following: a new subdivision is built. The project developer asserts that the people moving to the new homes are simply moving to the new subdivision from existing homes, therefore there is no net increase in GHGs or any criteria pollutants. Or a new refinery is built, and the oil and gas refiner asserts that the

refinery will reduce the market share of other existing refineries, thereby there is no increase in GHG or criteria pollutants. No responsible approving agency would accept such arguments.

Accepting the applicant's assertions as a demonstration of net-zero GHG emissions would not only be wrong, it would fly in the face of the state's role leading the country on climate change and would be setting a dangerous precedent for future development. Every developer, manufacturer, refiner, and other source of emissions would attempt to zero out GHG emissions by relying on the market-shifted concept without actual proof that the reductions will occur. The implications for methodology sleight of hand is tremendously adverse for the state. The requirement of AB 987 is net zero, not a magic trick or a baseline calculation that will completely turn on its head years of established guidance from air agencies and CEQA.

**B. The Application Fails to Demonstrate Sufficient Local GHG Mitigation Measures.**

The applicant does not comply with AB 987's mandate that "[n]ot less than 50 percent of the greenhouse gas emissions reductions necessary to achieve [net zero emissions] shall be from local, direct greenhouse gas emissions reduction measures." (Health and Saf. Code § 21168.6.8 subd. (j)(3).) This directive was included to ensure that the local community is not burdened with shouldering the full weight of the Project's harmful emissions.

The applicant could have proposed significant local measures such as solar installations on neighboring homes, energy efficiency retrofits of area businesses, and other local meaningful measures, especially since the Project would be surrounded by disadvantaged communities where such programs are sorely needed. It does not. The applicant cheats by inflating its baseline, taking credit for TDM reductions that will never be achieved, and then using generic GHG offsets without any local measures to achieve a "pretend" reduction in GHG. That is not what AB 987 requires. When the baseline is corrected to include only existing emissions sources on the Project site, the Project's proposed local mitigation measures are closer to 14% of the total required rather than the 57% that the application asserts.

Finally, the applicant treats the 50% local reduction requirement as a ceiling. It is not. It is a floor. The applicant can only look to reduce GHG emissions outside of Inglewood using credits or other methods if it is infeasible to do so locally. The applicant has not shown this. The applicant is gaming the requirements of AB 987 and shortchanging the local community.

**C. The Project Fails to Include Reasonable, Feasible, and Effective GHG Emission Reduction Mitigation Measures Implemented By Other Sports Venues.**

The Project fails to implement effective GHG mitigation measures that have been implemented around the country by other sports venues. We attach excerpts from a report by the Natural Resources Defense Council (“NRDC Report”) entitled “Game Changer,” on the energy consumption and GHG reductions that have been made by other sports stadiums, for comparison purposes. (Enclosure 1.) The NRDC Report shows what a sports venue that is genuinely trying to reduce its environmental footprint can do; this applicant falls woefully short.<sup>2</sup> NRDC’s Report sets forth actual examples of sports venues that are implementing measures far superior to those that have been identified in the AB 987 application for the Project. Some of the highlights of that report are discussed below.

**1. The Clippers’ Participation in NBA’s Environmental Performance Program Should be Guaranteed.**

The IBEC application does not mention the Clippers’ participation in the NBA’s Green Initiative (NRDC Report, p. 26-27) including but not limited to the Green Week program. The NRDC Report states “Each of the league’s 30 teams hosts Green Week community service events such as tree plantings, recycling drives, and park clean-up days to get involved in the league’s greening initiative.” (Report, p. 27.) The applicant must explain if and how it intends to participate in and promote the NBA Green Initiative at the IBEC.

**2. Heat Island Effect Reduction.**

The Miami Heat basketball team “added 9,161 square feet of canopies to reduce the heat island effect.” (NRDC Report, p. 45.) There is no mention of heat island reduction in the applicant’s discussion of construction or energy usage. (See Application, p. 5, Attachment G, p. 17.) Heat island effect reduction must be incorporated.

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<sup>2</sup> The NRDC Report is available at <https://www.nrdc.org/sites/default/files/Game-Changer-report.pdf>.

### **3. Environmental Management System.**

The Staples Center is the first U.S. arena to achieve ISO 14001 certification for an environmental management system (EMS), a written program setting forth environmental goals and practices. (NRDC Report, p. 56 and p. 58.) The applicant in contrast does not mention any EMS. An EMS should be required.

### **4. Energy usage measures must be improved.**

The applicant proposes to include solar cells only on “the main arena building roof.” (Application, p. 5.) Other building roofs are available and should be used for solar cells as well. The project includes large parking structure facilities, a retail complex, and a hotel. (Attachment A-2.) No explanation is provided for why these roofs cannot be used for solar cell placement in addition to the main arena building roof.

The Staples Center includes a 1,727-panel solar array. (NRDC Report, p. 56.) There is no statement of the number of panels planned for installation by the applicant. The Staples Center also uses a number of greening accomplishments, many of which are not mentioned by the applicant. These include “Low-voltage lighting relays”; “electronic ballast instead of magnetic ballast”; “variable speed drives on all air handlers and one chiller”; “time schedules for and photo cell control of exterior lighting”; “Super-efficient three-phase motors”. (NRDC Report, p. 56.)

The Trail Blazers “partnered with Pacific Power and the Bonneville Environmental Foundation for the purchase of 100 percent renewable energy programs.” Senate Bill 100, sponsored by Senator De Leon and approved by the Governor on September 10, 2018 states “it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100% of electricity procured to serve all state agencies by December 31, 2045.” (See also KCET, “Heat,” *infra*, Video mark 22:46.) The Project applicant as it seeks the Governor’s certification of Environmental Leadership status should commit to 100% renewable energy usage by 2045 as well.

The NRDC report states the Home Depot Center, which is home of the LA Galaxy soccer team and is not far away from Inglewood, “participates in Southern California Edison’s Demand Response programs, which enable it to manage energy use to avoid statewide demand peaks.” (NRDC Report, p. 103.) The LA Galaxy “participated in the Bonneville Environmental Foundation’s Solar 4R Schools program, which installs solar panels on a school in the winning team’s region.” (*Ibid.*) The applicant should commit

to installing solar roofs and similar measures within the local area before relying on purchasing offset credits to mitigate its impacts.

**5. Recycling must be promoted, including during Project operations.**

The applicant proposes to recycle 75 percent of its construction demolition material. (Application, p. 5.) The applicant makes no statement or commitment to any level of recycling *during* operations.

The Rose Garden Arena, home of the Portland Trail Blazers, has a more effective recycling program that includes recycling during operations: “More than 80 percent of operations waste is diverted from local landfills.” (NRDC Report, p. 64.) Philips Arena, home of the Atlanta Hawks, “sends its plastic, aluminum, glass, cardboard and paper waste to SP Recycling.” (NRDC Report, p. 99.) Furthermore, “Paper products, including paper towels, bathroom tissue, and copier paper, are all 100 percent post-consumer recycled content.” (NRDC Report, p. 99.)

**D. The Applicant Relies on Purchased GHG Offsets That are not Supported by Evidence.**

The application states that 39,486 MMTCO<sub>2</sub>e of GHG emissions, or about 38% (more than one-third of the total) of the GHG reductions claimed by the applicant will be produced as co-benefits of conventional air pollutant emissions reductions and/or from purchased GHG offsets (reductions from other GHG sources). (Application, p. 22.) The application does not specify what portion of this 38% of GHG reductions will come as co-benefits (nor the conventional air pollutant control measures that will produce them), and what portion from GHG offsets. The validity of whatever portion is supposedly coming from purchased offsets is not supported by evidence in the application.

The California Health and Safety Code establishes strict requirements for GHG offsets. They must be “real, permanent, quantifiable, and enforceable” and “in addition to any greenhouse gas reductions otherwise required by law or regulation, and any other greenhouse gas emission reduction that would otherwise occur.” (Health and Saf. Code § 38562, subs. (d)(1) and (2).) The application states that offsets will be “verified by a third party accredited by ARB” (Application, p. 23), giving as examples of such third parties three carbon offset registries that ARB has used in the state Cap-and-Trade program for reducing GHG emissions. (See Cal. Code of Regs., tit. 17, § 95801, et seq.) Unfortunately, there are no such ARB-accredited registries. The ARB does not approve or accredit any carbon offset registries for any use other than in the state’s Cap-and-Trade program, nor does it vouch for any registry for use outside that program.

The Air Resources Board recently issued the following statement regarding carbon registries in response to a reporter's questions:

The California Air Resources Board has approved offset project registries to aid in the implementation of the compliance offset program component of the state's Cap-and-Trade Program. The registries perform mainly administrative functions in ensuring that eligible offset projects have submitted required documentation and obtained third-party verification pursuant to the Cap-and-Trade Regulation and applicable CARB-approved Compliance Offset Protocols. CARB then reviews and approves all offset projects before issuing what are known as "compliance-grade offset credits" that are the equivalent to allowances and can be used by regulated entities in the Cap-and-Trade Program to meet a very limited portion (up to 8 percent) of their annual compliance obligations.

The offset project registries, as well as other organizations, also operate voluntary offset markets, where they issue voluntary offset credits that are NOT eligible to transition to compliance-grade offset credits. The voluntary market is completely separate from the compliance market and CARB does not oversee it in any way, nor does CARB regulate how voluntary credits are used. More information on CARB's Compliance Offset Program is available here:  
<https://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>.

...

CARB's Compliance Offset Program for the Cap-and-Trade Regulation is specifically limited to offset projects within the United States, although offset credits issued in Quebec or Ontario are also eligible for use since we have linked the California Cap-and-Trade Program with the cap-and-trade programs in those two jurisdictions. CARB does not issue compliance offset credits to international projects. Internationally generated credits are available through the voluntary market, which, as we mentioned above, is completely separate from offset credits that can be used in our Cap-and-Trade Program. CARB does not track voluntary credit prices nor who can use them.

(ARB statement issued January 28, 2018, by Stanley Young, CARB Office of Communications Director.) Thus, the ARB has not endorsed, does not regulate or "accredit," and does not oversee or warrant in any way any carbon registries in the voluntary market, even those registries that the ARB uses in the Cap-and-Trade compliance program. There are no ARB "accredited" registries for the applicant to use.

Nor does the application specify what procedures would be used to verify the effectiveness and enforceability of the offsets on which it relies. The ARB regulations



impose extremely tight requirements on all offsets used in the Cap-and-Trade program, to ensure that the offsets used there actually are real, permanent, verifiable, and enforceable (see Cal. Code of Regs., tit. 17, § 95801, et seq.), and only ARB itself issues the actual offset credits, not any carbon registry. No such tight requirements are provided in the application, and there is no comparable procedure in the application to demonstrate the validity of any such purchased offsets. Indeed, the application is rather casual in its treatment of this very complex and highly controversial subject. IRATE notes that ARB also limits the use of purchased GHG offsets to only 8% of a covered source's GHG emissions, not 38%, as the application here would allow. (Cal. Code of Regs., tit. 17, §§ 95854 and 95856 subd. (h)(1)(A).) There is no justification in the application for relying on purchased offsets for such a large portion of the proposed arena's GHG emissions.

The applicant seeks certification as an Environmental Leadership Project to avoid some aspects of CEQA to which other developers are held; in return, the state of California should hold the applicant here to similar standards for GHG emissions offsets as it holds the sources in the Cap-and-Trade program. There is no reason to suppose that a private party has similar expertise to the ARB's in determining the validity of a GHG offset, and it is not clear that any competent air quality agency will approve or oversee the obtaining and verification of the GHG offsets the applicant proposes to buy. Reliance on private carbon offset registries that are not accredited or overseen by the ARB or any other government agency is risky and unproven. Such questions must be thoroughly explored and settled prior to approval of this application.

Once built, the IBEC cannot be redesigned, and will be difficult and expensive to retrofit, should its purchased offsets fail. Offsets of conventional pollutants in significant amounts are subject to permit conditions and monitoring by the South Coast Air Quality Management District. Greenhouse gas emissions are not subject to such monitoring, nor does the application provide any method for monitoring the success – or failure – of the purchased GHG offsets on which it relies for more than a third of its required GHG emissions reductions.

Further, the application is extremely vague as to where the offsets will be obtained, stating only that “the project sponsor will, to the extent feasible, place the highest priority on purchase of offset credits that produce emission reduction within the City of Inglewood or the boundaries of the South Coast Air Quality Management District.” (Application, p. 23.) No definition of the term “feasible” is given, although IRATE suspects that the per-ton price of the offsets may be the determining factor. Under this brief and vague directive, local offsets, with their substantial potential for local co-benefits such as decreased local emissions of conventional pollutants and increased job opportunities, may be put into economic competition with international offsets that, due to cheaper labor costs in developing countries, will almost always tend to

be cheaper. The result may well be that local offsets, with their local co-benefits, will be found unavailable and infeasible when they are, in fact, technologically feasible, but merely have a higher purchase price than international offsets.

The criteria for exactly where the proposed offsets will be sought should be fully defined and disclosed before the application can be deemed complete or can be approved.

**E. The Application May Underestimate Human Health Risks.**

The applicant's use of a seriously flawed methodology for its GHG emissions analysis has additional consequences beyond an increase in GHG emissions. GHG emissions and local criteria pollutant emissions are closely correlated. By underestimating the GHG emissions of the Project and failing to properly mitigate those emissions locally, the applicant has also underestimated the local criteria pollutant emissions of the Project. Therefore, the health impacts to the community of Inglewood may also be underestimated. Exposure to criteria pollutants such as NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and diesel particulate matter (designated as an airborne toxic contaminant by the Air Resources Board, and as known to the State of California to cause cancer by the state's experts pursuant to Proposition 65 [Cal. Code of Regs., tit. 17, § 93000; tit. 27, § 27001, respectively] lead to health impacts, including respiratory and cardiovascular problems, and potentially cancer. The applicant does not account for these increased health risks, which is contrary to AB 987's mandate that the Project should "maximize public health, environmental and employment benefits" by reducing GHG emissions "in the project area and in the neighboring communities." The real-world consequences of building the arena as described in the application are completely contrary to what Governor Brown made clear was required in his signing message. The applicant is continuing to show its disdain for the local residents as it has done through this entire process.

The emission of GHGs contributes to climate change, which in turn creates serious public health impacts. Dr. Marc Futernick, an Emergency Physician, and others explained these concerns on a recent KCET program "Heat" SoCal Connected Season 9, Episode 6. (<https://www.kcet.org/shows/socal-connected/episodes/heat> ("Heat Video").) Dr. Futernick stated that "This [climate change] is the biggest threat to human health right now in the world and I am not alone in thinking that.... This is going to increase mortality significantly." (Dr. Futernick; Heat Video mark 4:06.) Dr. Rupa Basu, an epidemiologist with the California Environmental Protection Agency (CalEPA) on the same program stated: "When it is hot outside we see heart attacks, ... cerebral vascular diseases such as stroke, kidney disease, adverse birth outcomes such as premature births, stillbirth from low birth weight, and some respiratory diseases such as asthma attacks. Climate change is causing increased deaths and illnesses." (Dr. Basu; Heat Video mark 5:45.) Dr. Basu's pioneering work is connecting the health impacts of extreme heat and

climate change. For every 10 degree increase in temperature, the rate of deaths increases 2.3%. (Heat Video mark 6:11.) “People are dying at epidemic levels because of climate change.” (Dr. Basu, Heat Video mark 6:43.)

“Climate change is currently impacting the health of our community. People are dying at an increased rate and suffering all kinds of other illness related to the changes that are a result of global warming.” (Dr. Futernick, Heat Video mark 23:46) “The price is incalculable because what it will cost to deal with the asthma of a child who is five when that individual becomes an adult...You tell me.” (Attorney General Becerra, Heat Video mark 23:52.) “We need to reverse [the effects of climate change] to protect the health of our patients.... This is not theoretical... This is real.” (Dr. Futernick, Heat Video mark 25:20.)

Alex Hall at the UCLA Center for Climate Science projects a doubling of the number of extremely hot weather days by mid-century. (Heat Video mark 10:08.) In urban areas, the urban heat island effect is particularly bad as blacktop and concrete absorbs heat. “Los Angeles is particularly impacted because of the urban heat island effect.” (Dr. Basu, Heat Video mark 9:05.)

Climate change’s effects are particularly hard on environmental justice communities. (Dr. Futernick, Heat Video Mark 12:49; Dr. Basu, Heat Video Mark 12:33.) One phrase that is used is that “Climate change starts in our hood.” (Jan Victor Anderson, organizer, East Yard Communities for Environmental Justice; Video mark Heat Video mark 13:56.) Disadvantaged communities are “where people feel [climate change] first and worst.” (Sylvia Betancourt of the Long Beach Alliance for Children With Asthma; Heat Video mark 14:36.) Senator Kevin De Leon recognizes the need to address climate change as an environmental justice issue. (Sen. De Leon; Heat Video mark 16:48.) “When days and nights are hot, city dwellers are the first to run into trouble.” (Heat Video mark 20:44; citing <https://www.sciencenews.org/article/are-we-ready-deadly-heat-waves-future>.) “Heat claims more lives than floods, hurricanes and other weather.” (Heat Video mark 20:47 citing <https://www.sciencenews.org/article/are-we-ready-deadly-heat-waves-future>.) Climate change is a reality that must be seriously addressed by government at all levels by requiring mitigation of GHG emissions to the greatest extent feasible. (Heat Video mark 19:36 [NASA Climate Reality webpage with 1.3 million followers prior to being removed.]) According to David Pettit of the Natural Resources Defense Council, current federal government policies will lead to a 7 degree Fahrenheit increase in global temperatures by 2100, “which would be total economic and human disaster.” (Heat Video mark 22:24.) An Environmental Leadership project in California should demonstrate true environmental leadership in mitigating GHG impacts.

#### **F. The Project is Inconsistent with SCAG's RTP/SCS.**

AB 987 requires that the Project be consistent with a Regional Transportation Plan/Sustainable Community Strategy ("RTP/SCS") that meets California Air Resources Board's ("CARB") targets for reducing GHG emissions. (Health and Saf. Code § 21168.6.8 subd. (a)(3)(D).) It is not.

Southern California Association of Governments 2016-2040 RTP/SCS is focused on reducing vehicle miles traveled ("VMT"). The project will, in fact, increase VMT. The Clippers currently play at the Staples Center. Staples is in downtown Los Angeles, an area rich in transportation infrastructure. Heavy rail, light rail, Metro buses, Santa Monica's Big Blue Bus, Foothill Transit, DASH, and private shuttles and pedestrian amenities permitting easy access to the Staples Center from millions of square feet of existing high rise offices and tens of thousands of dense multifamily housing are all present in downtown. Billions of dollars have been invested in transit in the downtown Los Angeles area. None of that is present in Inglewood. The Clippers are proposing to move from the transit-rich area of downtown Los Angeles to what the applicant calls a "transit starved" area. (California Senate Judiciary Committee hearing, June 26, 2018, Video mark 2:26:18.) The closest Metro Rail stop is 0.8 miles away from the proposed project (Application, Attach. D, p. 10), a significantly greater distance than the preferred one-quarter mile away.

The Clippers are moving from a dense urban area to a suburban area. Attendees of Clippers games and concerts held at Staples Center have a variety of options to choose from to travel to and from sports events. If the Clippers games are moved to Inglewood, the existing downtown Los Angeles transit options disappear, which will almost certainly result in more attendees traveling by personal vehicle to events, contrary to the application's optimistic assumptions.<sup>3</sup> It is reasonable to assume that the move from downtown Los Angeles to Inglewood will increase VMT, and the applicant has not proven otherwise by solid evidence. Instead, the application states that "The trip length for attendees was based on the weighted average trip distance of 19.38 miles for LA Clippers game attendees at the Staples Center" (Application, Attach. G, p. 11), despite the move from downtown Los Angeles to the suburbs. Inglewood is approximately 13 miles from downtown Los Angeles. And it cannot be seriously argued that somehow transit usage in Inglewood will be better than transit usage in downtown Los Angeles.

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<sup>3</sup> For example, the application optimistically assumes that 10% of IBEC event attendees will use shared mobility services like Uber, Lyft, or taxis, compared with 4% now, simply because the IBEC will have "a staging area for shared mobility services." (App., Attach. D, p. 10.)

California recognizes that reducing VMT is a key to hitting its climate targets in the coming decades. (“California’s 2017 Climate Change Scoping Plan” (ARB, 2017), pp. 25, 77-78.) Not only will certifying this Project run afoul of AB 987 requirements, it will also make it harder for the state to reach its climate goals. The question here, in part, is whether the Governor can certify the construction of this arena away from the dense core of Los Angeles, and placed instead in a suburban location, as being consistent with the applicable 2016-2040 RTP/SCS. Certification of this project as consistent with the 2016-2040 RTP/SCS would have serious implications for how other jurisdictions and other developers will view what compliance with the 2016-2040 RTP/SCS means. Years of hard work, legislative and administratively, by the Governor will be impacted by any such certification. This is not like what the Oakland A’s are doing in moving to an urban location in Oakland well served by transit. This is not like what the Warriors did in moving to an urban location in downtown San Francisco well served by transit. This is the antithesis of those relocations as it creates and increases total VMTs rather than reducing them.

**G. The Application’s Transportation Demand Management Program (“TDM”) Fails to Demonstrate a 15% Reduction in the Number of Vehicle Trips.**

Public Resources Code § 21168.6.8 subdivision (a)(3)(B)(i) requires “a transportation demand management program that, upon full implementation, will achieve and maintain a 15-percent reduction in the number of vehicle trips, collectively, by attendees, employees, visitors, and customers as compared to operations absent the transportation demand management program.” The application falls far short in a variety of ways in demonstrating how it will achieve this directive.

First, the application makes the assertion that 34% of attendees will arrive by some mode of transportation other than a personal car. Compare this to the Clippers current home, the Staples Center in downtown Los Angeles, which currently sees only 20% of its attendees arrive by some mode of transportation other than a personal car. (Application, Attach. D, p. 11.) The applicant is expecting the percentage of game attendees arriving by mode other than personal car to triple (from 11% to 34%, Application, Attach. D, pp. 12-13) at a location whose closest transit stop is nearly a mile away. (Application, Attach. D, p. 10.) The Clippers testified in Sacramento during legislative hearings on AB 987 that Inglewood was “transit starved.” (California Senate Judiciary Committee hearing, June 26, 2018, Video mark 2:26:18.)

The Staples Center in downtown Los Angeles benefits from a subway stop right outside its doors, whereas the Project location’s nearest existing and proposed subway stops are almost a mile away. Assuming that there will be an increase in public transit use

when transit is farther away is unsupported by reality. Applying simple logic to the question makes this easy. Does anyone realistically think that attendees to events at the proposed new arena are going to drive to a Metro station somewhere, get on Metro and take it to Inglewood, then get on a 45-person bus for a drive through the congested streets on Inglewood to get to the proposed Project arena? And then do that in reverse at 10 pm or possibly later at night?

A detailed analysis should also be provided for expected travel times on a shuttle to the proposed arena on a day when the Forum has a capacity event. Anyone who has gone to a concert at the Forum knows that it is a horrendous problem to try to get there on Manchester Boulevard or Prairie Avenue. Imagine what will happen when concurrent events occur at the Forum and the new Clippers arena. To suggest that shuttles will be able to get quickly and efficiently from the transit stop two miles away to the Clippers' arena is wishful thinking, and is certainly not supported by evidence.

The applicant also uses flawed assumptions and incorrect logic in calculating the number of vehicle trips the Project generates. The applicant assumes that the transit profile of its attendees will remain constant regardless of the type of event at the proposed arena. The applicant uses data derived from "current attendees of LA Clippers games at Staples Center" to forecast the transportation habits at the new arena for *all* types of events. This is clearly flawed as attendees of concerts or convention (trade show) attendees and other non-Clippers games are far less likely to use public transit than are repeat attendees of Clippers games. The Staples Center is literally on the same property as the LA Convention Center, in close proximity to thousands of downtown hotel rooms. Are convention attendees going to leave downtown and go to an arena? Further, the application confidently predicts that the new IBEC facility will book many non-sports events, including concerts and family events. It does not show that families will choose to transport their children to and from the arena by transit, including when the event may end late at night. Nor does it provide persuasive evidence that concert-goers or young people on dates will choose to use Metro and shuttles to attend these events. It simply assumes these things. By assuming that all events are the same with respect to transit use, the application may have dramatically underestimated the number of vehicle trips associated with the Project.

The applicant also fails to provide enough details to allow a sound evaluation of its proposed TDM program. AB 987 requires the applicant's TDM program to include "a specific program of strategies, incentives, and tools...with specific annual status reporting obligations..." The application does not include any discussion of how the TDM program results will be verified or reported on an annual basis as AB 987 requires. The applicant even acknowledges that the TDM program is not finalized stating "The measures included in the IBEC TDM Program are subject to further refinement and

revision.” (Application, p. 6.) The TDM program is thus simply a list of goals that are subject to change without any plan to verify that the goals are being met.

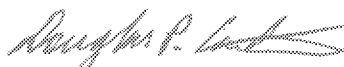
These shortfalls make evident that the applicant has failed to demonstrate compliance with AB 987’s mandate to reduce the number of vehicle trips by 15%. And there is no evidence it can meet 7.5% reduction after the first NBA season. The applicant must revise its application to correct these errors and provide greater detail into how it plans to meet AB 987’s rigorous requirements.

**Conclusion.**

We respectfully request that the Governor not certify the Project. It does not meet the requirements of AB 987. The Project increases GHGs emissions and VMT, relies on unproven and unreliable GHG offsets, and puts Inglewood residents’ health at risk. The applicant needs to provide substantial additional information and analysis to support its contention that it meets AB 987. The public must have a right to review any such submissions.

Thank you for your consideration.

Sincerely,



Douglas P. Carstens

1. Excerpts of NRDC Report: “Game Changer: How The Sports Industry Is Saving the Environment,” September 2012.





**Enclosure 1**



# GAME CHANGER

## HOW THE SPORTS INDUSTRY IS SAVING THE ENVIRONMENT

**PREFACE** Major League Baseball Commissioner Allan H. (Bud) Selig

**AFTERWORD** Martin Tull, Executive Director, Green Sports Alliance

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The Green Sports Alliance would like to thank our members, the Bullitt Foundation, the U.S. Environmental Protection Agency, the Natural Resources Defense Council and the many other partner and sponsor organizations that provide technical assistance and funding to support the mission of the Alliance and enable our success.

For more information about greening sports, visit [www.nrdc.org/sports](http://www.nrdc.org/sports) or [www.greensports.org](http://www.greensports.org). Download this report at [www.nrdc.org/game-changer](http://www.nrdc.org/game-changer).

## About NRDC

NRDC (Natural Resources Defense Council) is a national nonprofit environmental organization with more than 1.3 million members and online activists. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment. NRDC has offices in New York City, Washington, D.C., Los Angeles, San Francisco, Chicago, Montana, and Beijing. Visit us at [www.nrdc.org](http://www.nrdc.org).

NRDC's policy publications aim to inform and influence solutions to the world's most pressing environmental and public health issues. For additional policy content, visit our online policy portal at [www.nrdc.org/policy](http://www.nrdc.org/policy).

## About Green Sports Alliance

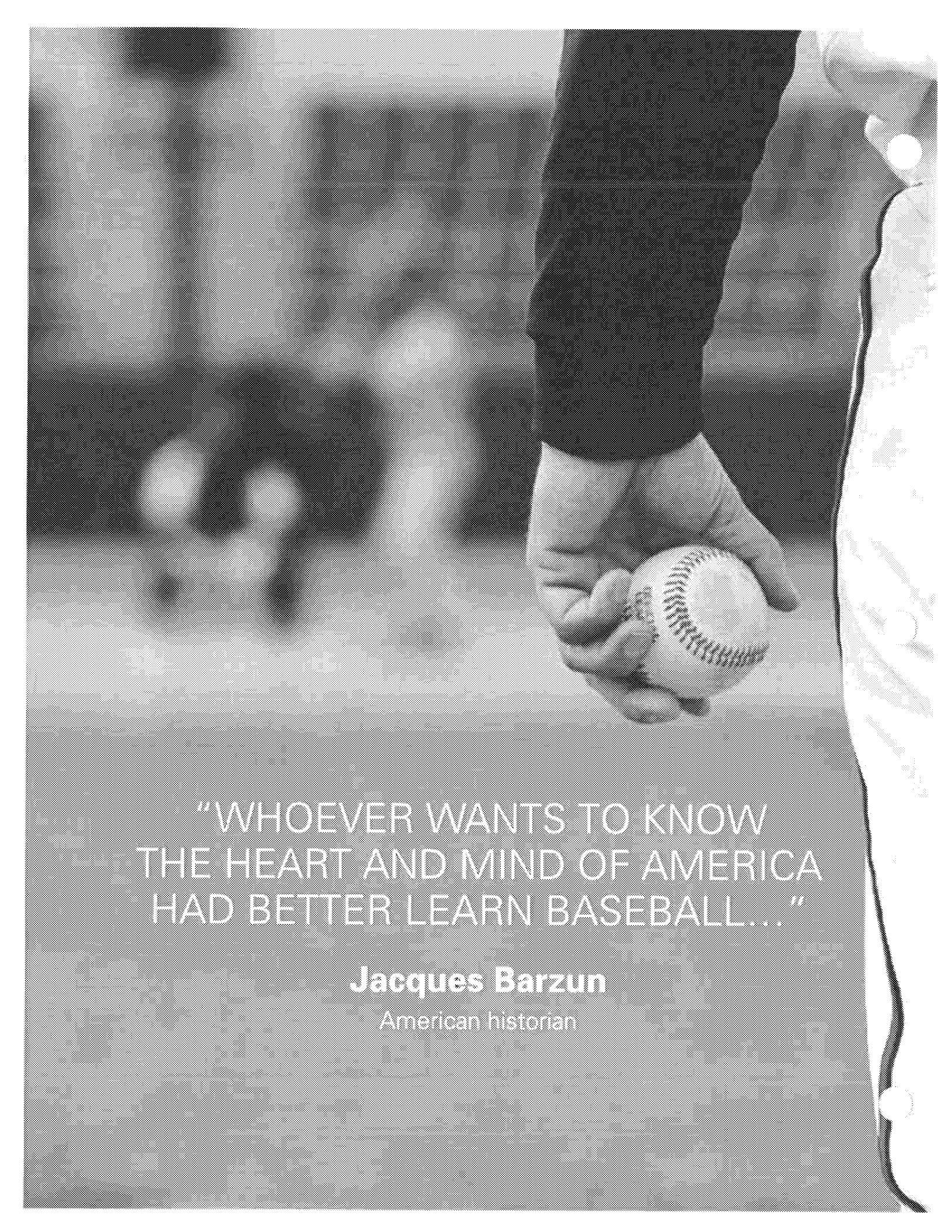
Green Sports Alliance is a non-profit organization with a mission to help sports teams, venues and leagues enhance their environmental performance. Alliance members represent over 100 sports teams and venues from 13 different sports leagues. Please visit [www.greensportsalliance.org](http://www.greensportsalliance.org) for additional information.

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This report is dedicated to  
Robert Redford,  
NRDC Trustee,  
and father of the sports greening movement.



"WHOEVER WANTS TO KNOW  
THE HEART AND MIND OF AMERICA  
HAD BETTER LEARN BASEBALL..."

**Jacques Barzun**

American historian

**H**aving been honored to serve as the Commissioner of Major League Baseball since 1992, I have often said that our game is a social institution with enormous social responsibilities. I still often marvel at the examples of Jackie Robinson, whose courage generated what remains our game's proudest and most powerful moment, and Roberto Clemente, whose spirit of humanitarianism shines a light on the difference that one person can make for those in need.

Forty years after Jackie Robinson and Roberto Clemente left us all too soon, their vibrant legacies continue to remind us of the impact that our game, as a common thread for so many, can have on important social issues. One of those issues is care for our environment. As an outdoor game played in fields, parks and backyards across the country and around the globe, our sport is closely aligned with the environment. I am proud that Major League Baseball has taken substantial action to do its part to protect it.

In 2006, I was introduced to the Natural Resources Defense Council (NRDC) by Bob Fisher, a principal partner of the Oakland Athletics and an NRDC trustee. MLB then began an alliance with NRDC to identify and promote best sustainable operating practices and to coordinate and share existing practices by the Clubs. Soon thereafter, Major League Baseball conducted a survey of all 30 of our Clubs, documenting the broad range of sound environmental practices that they have implemented in their communities. Guided by NRDC, Major League Baseball used the results to develop an environmental stewardship program—the first designed by a professional sports league. Since then, MLB has assembled operations guides tailored to each Club, incorporated environmentally sensitive practices into the World Series and All-Star Week, and created a software program to collect and analyze stadium operations data. These efforts have helped us formulate a series of best practices, which have reduced the environmental footprint of our 30 Clubs.

In 2011, more than 73 million fans attended Major League games. In addition to recycling paper, cans and bottles at its 2,430 regular-season games each year, Major League Baseball has a significant global platform from which its fans can be educated about the importance of environmental stewardship. Our Clubs have helped instill in fans the practical steps they can take in order to make a difference. Collectively, the potential environmental reduction that can be achieved is meaningful.

While there is more work to be done, it is my great hope that the work of Major League Baseball and its Clubs can stand as an example and inspire others to join in this vital effort. Major League Baseball pledges to continue to devote its time, energy, influence and resources toward making lasting contributions to our fans, their communities and our society as a whole.

In my two decades as Commissioner, I have seen our sport take important strides forward on this essential issue. Environmental stewardship resonates with all of us who love baseball and seeing it played on green grass and under blue skies. As we strive to fulfill our social responsibilities, the national pastime will continue to protect our natural resources for future generations of baseball fans and set an example about which they can be proud.

Major League Baseball Commissioner Allan H. (Bud) Selig

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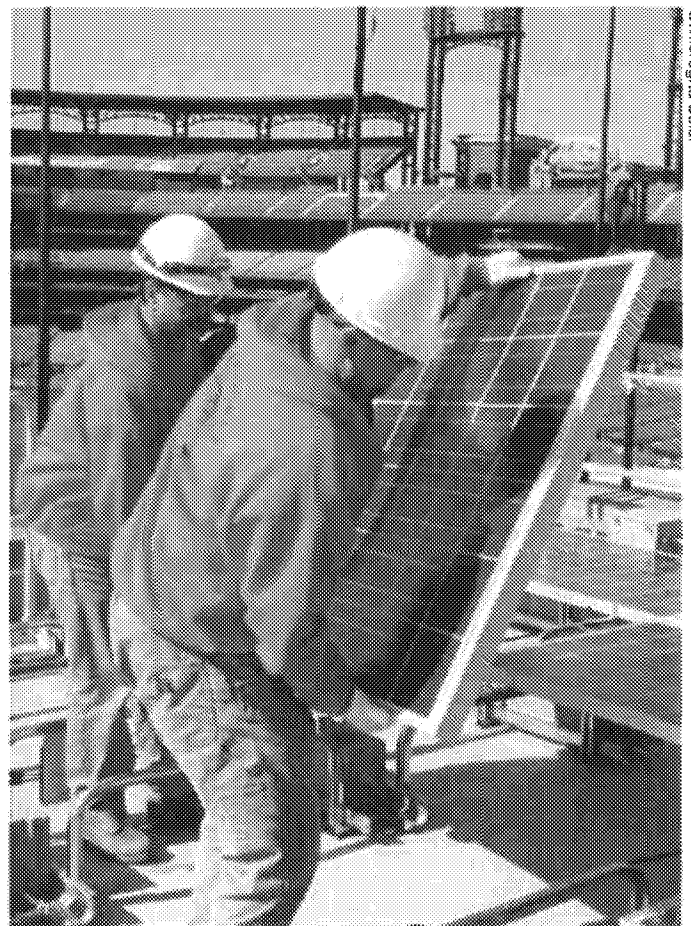


## EXECUTIVE SUMMARY

The professional sports industry includes some of the world's most iconic, inspirational and influential organizations. In a cultural shift of historic proportions, the sports industry is now using its influence to advance ecological stewardship. North America's professional leagues, teams and venues have collectively saved millions of dollars by shifting to more efficient, healthy and ecologically intelligent operations. At the same time, the sports greening movement has brought important environmental messages to millions of fans worldwide. Sport is a great unifier, transcending political, cultural, religious and socioeconomic barriers. It also wields a uniquely powerful influence, both cultural and economic, that provides much-needed leadership in sustainable practices and, in so doing, promotes a nonpolitical public commitment to environmental protection.

This report provides a collection of never-before-assembled case studies of the sports industry's most prominent and successful greening initiatives from across North America. In compiling this information, our goal is to celebrate the sports industry's growing embrace of environmental stewardship as more and more sports leagues, teams and venues invest in energy efficiency, water conservation, recycling, renewable energy, safer chemicals and fan engagement focused on remedying some of our most pressing environmental problems. A principal objective of this report is to educate sports professionals, their supply chains and millions of fans about the business case for greening, from achieving cost savings and enhancing brands to developing new sponsorship opportunities and strengthening community ties.

The sports greening success stories featured in this report provide valuable lessons for organizations of all types, whether they are involved with the sports industry or not, highlighting what teams, venues and league jewel events are doing to protect our planet and educate their fans. Each of the team and venue case studies includes four sections that help explain the greening process: (1) Why go green: what motivated teams and venues to start greening? (2) Where to start: how did teams and venues begin, who was involved, and which greening initiatives were investigated first? (3) Challenges overcome and ongoing: challenges teams and venues faced, tactics they used to meet these challenges, and hurdles they still face; and (4) Lessons from the field: important lessons from team and venue experiences as they implemented their green initiatives.



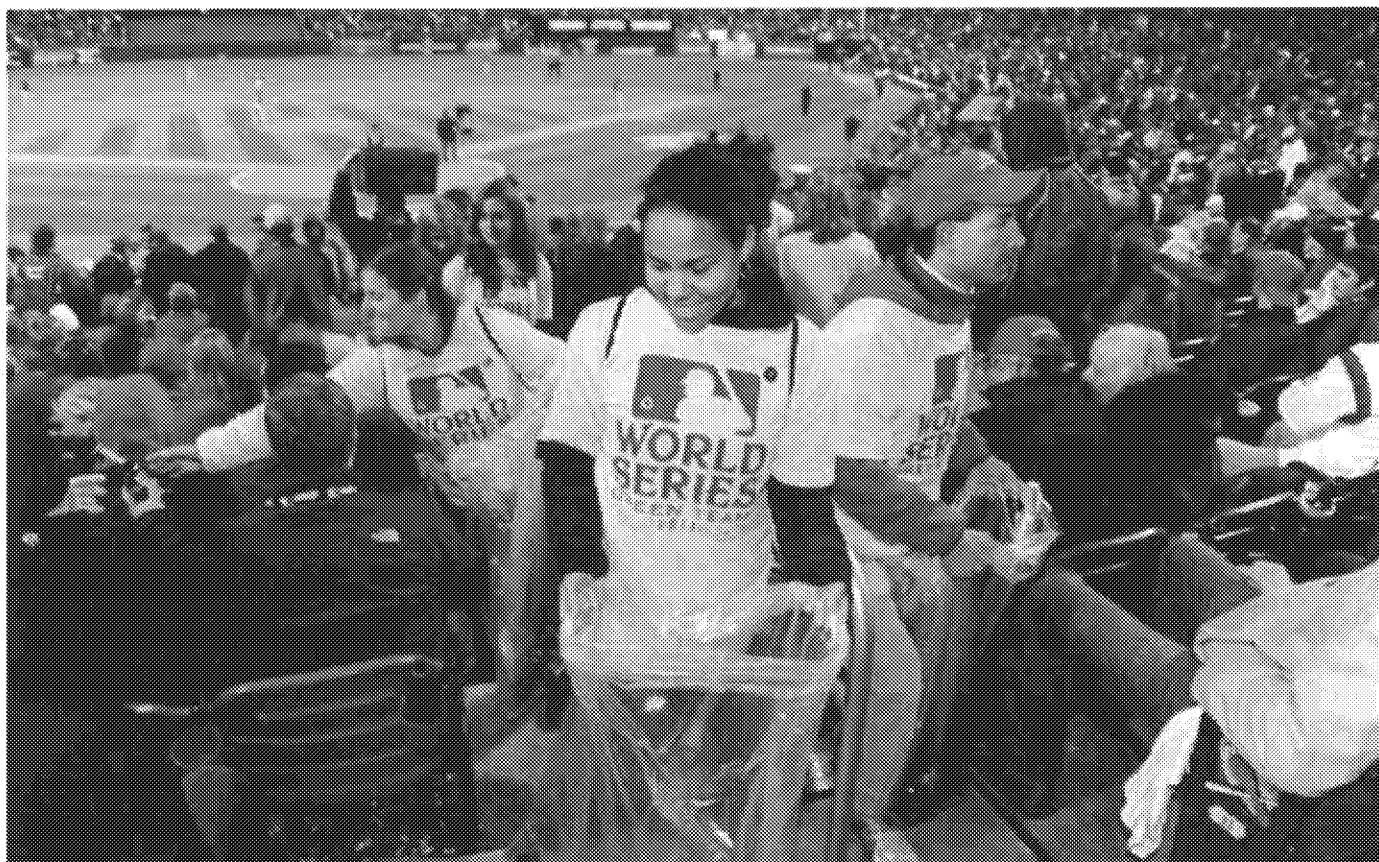
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## PROFESSIONAL SPORTS IS PROVING THE BUSINESS CASE OF GOING GREEN

- ✦ **Greening provides direct financial savings:** In this report you will learn about the team that saved approximately \$1.5 million in utility costs (electricity, natural gas, water and sewer service) from 2006 to 2011 by reducing natural gas use by 60 percent, electricity use by 30 percent and water use by 25 percent. In this report you will also learn precisely how much it cost one major arena in the southeast to achieve LEED Certification.
- ✦ **Greening attracts sponsors:** In this report you will learn about the venue that saved \$1.6 million in a single year due to its greening efforts; it also attracted about \$1 million in new corporate sponsors that aligned with the greening efforts.
- ✦ **Greening provides competitive advantage to attract tenants and entertainment clients:** This report includes a profile of the venue where being environmentally conscious has significantly improved brand image and provided a point of market differentiation, which has attracted new clientele and corporate partners. For this venue, going green has provided a platform to attract entertainers who want to play in green venues.
- ✦ **Greening enhances the fan experience:** In this report you will learn about one team's efforts to post recycling signs around its venue and provide recycling bags for tailgaters, an initiative that resonates so much with the community that fans roll up their sleeves to help hand out and fill up the recycling bags, which are later picked up by the team.
- ✦ **Greening strengthens community ties:** Aside from the operational benefits of going green, this report will tell you about the team that says it has received only positive feedback about its greening initiatives, including thousands of favorable media articles, local community achievement awards and immense fan applause, proving these efforts are worthwhile beyond the business case by representing the core values of the surrounding community. You will also learn about the largest public recycling event in the history of New York City, sponsored by Major League Baseball.
- ✦ **Greening builds local economic growth:** You will also learn about one team's investment in onsite renewable energy, which not only directly benefits the environment but also contributes to local clean-tech jobs and helps to boost the local economy by stimulating the state's clean-tech manufacturing industry.

### Key findings from the case studies include these:

- ✦ All Commissioners of professional sports leagues in the United States have made commitments to environmental stewardship and are actively encouraging the teams in their leagues to incorporate sustainable measures into their operations.
  - ✦ 15 professional North American stadiums or arenas have achieved LEED green building design certifications, 18 have installed onsite solar arrays, and virtually all have developed or are developing recycling and/or composting programs.
  - ✦ Among all sports leagues, Major League Baseball has the best-developed environmental data measurement program, followed by the National Hockey League and the National Basketball Association.
  - ✦ Of the 126 professional sports teams in the five major professional North American leagues, 38 teams have shifted to renewable energy for at least some of their operations, and 68 have energy efficiency programs.
  - ✦ All of the large sports concessionaires, that collectively feed tens of millions of people each year, have developed environmentally preferable menus for at least some of their offerings.
  - ✦ All Jewel events, including the World Series, the Super Bowl, the Stanley Cup playoffs, the NBA Playoffs and Finals, the MLS Cup, the US Open Tennis Championships and all of the league All-Star Games, now incorporate greening initiatives into their planning and operations.
  - ✦ All leagues educate their fans about environmental issues, in particular the need to recycle and to reduce energy and water use.
- Perhaps most important, millions of pounds of carbon emissions have been avoided, millions of gallons of water have been saved, and millions of pounds of paper products are being shifted toward recycled content or eliminated altogether.
- Certainly much work remains to be done, but it is heartening to note that teams and leagues across North America are implementing meaningful changes and educating tens of millions of fans about environmental stewardship. Collegiate athletics, alongside minor leagues, high school athletics and other organized youth sporting events, are the next frontier for the sports greening movement. Many college athletics departments nationwide have already undertaken impressive environmental initiatives, from LEED-certified facilities and onsite solar arrays to recycling challenges between schools. Colleges are just beginning to tap into the enormous potential to benefit their bottom line and engage their huge communities of sports fans on issues of environmental stewardship.



**THE SPORTS INDUSTRY OFFERS THE POTENTIAL FOR UNPARALLELED OUTREACH TO MILLIONS OF FANS AND BUSINESSES VIA THE SCREENING OF ENVIRONMENTAL PUBLIC SERVICE ANNOUNCEMENTS (PSAS) AND OTHER FORMS OF FAN ENGAGEMENT. FOR EXAMPLE, TO DATE THE SPORTS GREENING PSAS THAT NRDC CREATED IN PARTNERSHIP WITH THE NBA, THE NHL, MLB AND THE USTA HAVE REACHED AN ESTIMATED 45 MILLION PEOPLE VIA BROADCAST TELEVISION AND IN-ARENA SCREENINGS. SEE THESE VIDEOS ABOUT THE IMPORTANCE OF ENVIRONMENTAL STEWARDSHIP AT [WWW.NRDC.ORG/GAME-CHANGER](http://WWW.NRDC.ORG/GAME-CHANGER).**

The motivation for sports to engage in greening is simple. The games we love today were born outdoors, and without clean air to breathe, clean water and a healthy climate, sports would be impossible. In fact, nature is the ultimate source of all economic value. No commerce or culture is possible without clean air and water; fertile topsoil; a chemically stable atmosphere; raw materials for food, energy and medicine; or the natural processing of waste by the millions of species inhabiting our soil, water and air. It is the availability of these wells of natural capital that makes sports and other types of human activities possible. Business leaders must devote the same level of effort to keeping this natural capital intact that they devote to more traditional capital. The sports industry's increasing demand for ecologically better products can help industrial leaders understand and embrace that goal.

This report is a celebration of the sports industry's impressive environmental accomplishments to date, of the extraordinarily important work being done largely behind the scenes, out of the spotlight. This document confirms that going green is savvy business, enabling teams and venues to cut operating costs, strengthen corporate branding, attract sponsors and enhance the fan experience, while providing many environmental benefits. Ideally, the practical examples and expert recommendations included in this report will inspire many more sports teams, and the businesses that service them, to follow their good example. The lessons from those who manage sports facilities will help us move toward ecological stability, crucial for social and economic prosperity. Current and future generations depend on these efforts, and on the prospect that others the world over will notice and emulate this industry's inspiring greening work.

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## CHAPTER 1: WHY GREENING SPORTS MATTERS

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The sports industry's growing embrace of energy efficiency, renewable energy, recycling, water conservation, safer chemicals and healthier food is educating millions of fans about the importance of protecting the environment and natural resources on which we all depend. Through their leadership on the field, court or rink, professional and collegiate sports—and their sponsors—are showing their many fans practical, cost-effective solutions to some of our planet's most dire ecological issues.

Sports leagues, teams and venues are adopting environmental practices to improve their operations and save money while using their unique cultural and economic influence to demonstrate to thousands of businesses and millions of people how to be better environmental stewards. Yet, despite the impressive strides this industry is already taking to protect the environment, the sports greening movement is just beginning. The potential is enormous for professional sports to help move society toward more sustainable practices and lead our economy to a stronger future.

It goes without saying that sports are a hugely popular, economically influential industry. And while team loyalties vary and sports management practices differ, there is one thing we can all agree on: Sports belong to no particular political party. Consequently, perhaps no other industry is better suited to confirm that environmental stewardship has become a mainstream, nonpartisan issue. Hundreds of millions of people of all political, social, religious and economic backgrounds watch sporting events each year, and the global supply chain of the sports industry includes the largest and most influential corporations in the world. In fact, while only 13 percent of Americans say they follow science, 61 percent identify themselves as sports fans.<sup>1</sup>

Consider how culturally influential sports can be: Jesse Owens in 1936, debunking the Aryan supremacy myth. Billie Jean King beating Bobby Riggs in the first female-versus-male professional tennis match, a big step toward pay equality. Passage of Title IX, leading to financing for women's athletics. Muhammad Ali's conscientious objection to the Vietnam War and his role as a spokesman for civil rights. Magic Johnson's openness about his HIV/AIDS infection, which helped to destigmatize that illness. Jackie Robinson breaking the race barrier in Major League Baseball.

Consider as well the combined visibility and market influence of the Super Bowl; the World Series; hockey's Stanley Cup playoffs and Winter Classic; the NBA playoffs and finals; the US Open Tennis Championships; the pro basketball, baseball, hockey and soccer all-star games; and

international soccer's World Cup competition. Now consider the value of mobilizing that combined influence to promote greening.

Greening is the process of reviewing operations and procurement policies with an eye toward reducing environmental impacts. It is an ongoing enhancement process that all businesses need to engage in to advance sustainability. The ecological threats we face are real. We have a narrowing window of opportunity in which to limit the ecological damage we are causing, to reduce global warming impacts, to save our oceans and the fisheries they support, and to protect biodiversity and our last remaining wild spaces.

If the sustainable economy does not exist, then it needs to be built. Overwhelmingly it will be built by the private sector. Government, of course, has an irreplaceable role to play in building the infrastructure needed for commerce and culture. Government must also encourage ecologically intelligent private sector investments through incentives and smart regulations. To date, however, government has failed to provide incentives and regulations that will adequately encourage sustainable investments at the scale needed. Indeed, most government incentives and regulations continue to encourage and subsidize ecologically ignorant manufacturing.

There is no single business undertaking or law that can solve our many ecological problems. Rather, it will require countless contributions from every corner of society. However small our day-to-day actions may seem, our collective purchases add up to meaningful regional and global impacts. Most individuals and businesses can do only relatively small things, whether it's buying products made with recycled content, purchasing renewable energy, driving a fuel-efficient car, or conserving water. What is clear, however, is that everyone has to do something to address the ecological pressures we collectively face. And the many small ecological initiatives being implemented throughout the world of sports are adding up, offering us the hope that we can turn current ecological trends around.

**Pages intentionally omitted**



programs launched in 2011 that include metal tennis ball can top recycling, and composting in kitchens and the Food Village dining area. In addition to collecting organic waste from kitchens and restaurants for composting, cooking oil is recovered for conversion into biodiesel fuel. The Open's landfill diversion rate increased by almost 30 percent in 2011 from 2010, with over 200 tons of waste diverted from landfill.

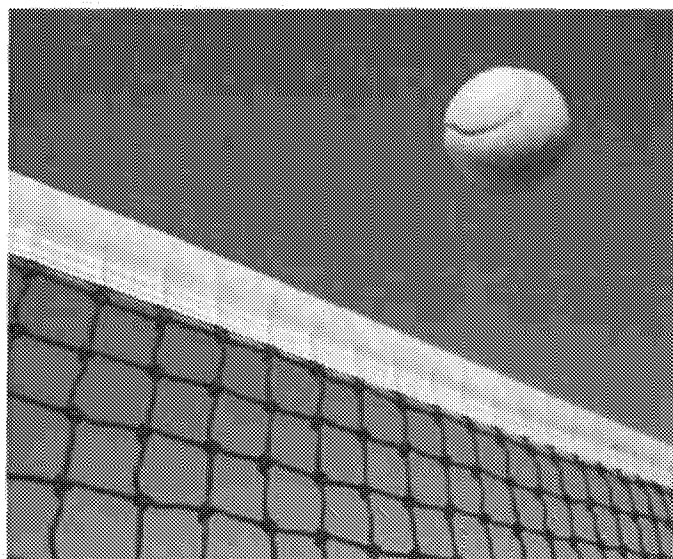
■ **REUSE:** 70,000 tennis balls used during the matches and practices at each Open are reused by USTA tennis programs or donated to community and youth organizations throughout the country.

■ **FOOD:** Levy Restaurants provides ecologically preferable paper products made from post-consumer recycled paper, switching 2.4 million virgin paper napkins to 100 percent post-consumer content in 2008. In addition, through its partnership with Levy, the US Open's local and organic food offerings represented 34 percent of the menu in 2011, with expanded use of organic produce and meats from local farms, and all food serviceware in the Food Village was compostable.

■ **PAPER:** In 2008, the USTA switched the paper it used for game day drawsheets to 100 percent post-consumer recycled content, and in so doing saved 2,123 gallons of wastewater and avoided generating 441 pounds of CO<sub>2</sub>-equivalent greenhouse gases and 129 pounds of solid waste. Currently, all paper products used on the grounds, including tickets, maps, tournament guides, restaurant passes, parking flyers, and napkins, include at least 30 percent post-consumer content. Many printed materials (program, drawsheet, etc.) are printed on paper certified by the Forest Stewardship Council. All paper towel dispensers have been replaced with motion-sensor dispensers.

■ **TRANSIT:** The USTA encourages US Open fans to use public transportation during the tournament, including a program first funded by NRDC and now supported by Esurance that distributes over 2000 metro cards to attendees, and through US Open-specific MTA advertisements urging fans to take the subway to the USTA Billie Jean King National Tennis Center. In 2011, 60 percent of fans took mass transit to the US Open, up from 32 percent in 2000.

■ **OUTREACH:** NRDC produced environmentally-educational PSAs featuring Venus Williams, Billie Jean King, and doubles champions Bob and Mike Bryan that were shown throughout the grounds of the USTA Billie Jean King National Tennis Center, including on the Arthur Ashe Stadium jumbotron, at the 2008 US Open (and at subsequent USTA events). The PSAs educated fans and attendees about the environmental benefits of recycling, taking mass transit, buying local and organic food, and using recycled-content



paper, as well as directing them to [www.nrdc.org](http://www.nrdc.org) for more information. Two additional Green USTA PSAs produced in 2010 feature Alec Baldwin. NRDC's Eco-Tips reminding fans to reduce, reuse, and recycle are promoted in the US Open Daily Draw-Sheet, at [USOpen.org/USTA.com](http://USOpen.org/USTA.com), and in voice announcements heard throughout the grounds. Over 100,000 wallet-sized NRDC eco-tips cards were distributed to 2008 US Open attendees, directing fans to [www.nrdc.org](http://www.nrdc.org). In 2011, the USTA began posting these tips through its social media channels.

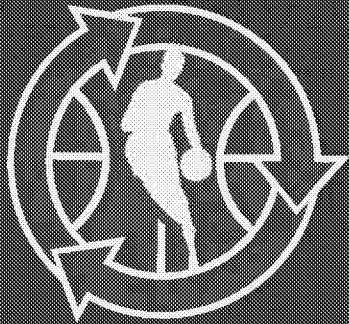
■ **MERCHANDISE:** Green products featured as part of the overall US Open Collection of merchandise have included 100 percent organic cotton t-shirts (designed by Heidi Klum and Billie Jean King), hats comprised of 50 percent post-consumer plastic (each hat containing the equivalent of two one-liter recycled plastic bottles), cinch backpacks (each containing the equivalent of six recycled plastic bottles), and reusable totes made from 80 percent post-consumer content. A portion of the proceeds from the US Open organic collection was donated to Unisphere, Inc., the non-profit organization dedicated to maintaining and preserving Flushing Meadows Corona Park, home of the US Open.

"The USTA is committed to reduce its ecological impact and continuously seeks new ways to be at the forefront of the global effort to preserve the environment," said Gordon Smith, executive director and chief operating officer, USTA. "Our dedication to US Open's greening efforts will create a lasting legacy for the environment, as well as encourage tennis fans from all over the world to be environmental stewards."

"If we just take small steps," adds Billie Jean King, "it will lead to big change."



## NATIONAL BASKETBALL ASSOCIATION ALL-STAR GAME AND GREEN WEEK



The NBA began working with NRDC's sports greening project in 2007 to enhance the environmental profile of the league. NRDC and NBA launched the league's greening initiative by creating an environmental policy statement that established the league's goal to improve their environmental performance, and presented their sustainability initiative as an institutional priority.

"Through the NBA Green initiative, the league and its teams are taking steps to become a more environmentally responsible organization," said NBA Commissioner David Stern. "With the NRDC's invaluable partnership, we have implemented recycling programs, installed energy- and water-saving fixtures, encouraged the use of sustainable supplies, and promoted the use of mass transit. We know there is more we can do, and we look forward to continuing to work with the NRDC and our teams to help protect our environment."

During the launch of the NBA's green initiative, NRDC assisted the league with environmental assessments at their front offices and at the NBA Store in New York City. NRDC offered strategic advice to the NBA Store on improving their procurement and operational practices, including waste and paper reduction, better paper procurement, low-VOC and environmentally friendly cleaning products and paints, an improved recycling program, and energy-efficiency improvements. At NRDC's suggestion, the NBA removed all plastic items containing the chemical BPA that might come in contact with children. This NBA initiative was four years before the U.S. FDA recommended removing BPA from plastics.

Environmental features have also been incorporated into the NBA's offices and staff events. For instance, the NBA's company-wide picnic in June 2009 reduced the use of disposable utensils, recycled all aluminum cans and plastic bottles, and used 100 percent post-consumer recycled paper products such as sandwich wrap, inner cartons and trays, napkins, and shopping bags.

Soon after the launch of the league's environmental initiative, the "NBA Green" program was formed under the NBA's philanthropic NBA Cares program, and NRDC created customized Greening Advisors that were distributed to all NBA teams and posted on the NBA's HomeCourt intranet site. These web-based advisors provide a comprehensive toolkit for teams and arenas to green their operations.

In an effort to highlight their growing environmental initiatives and engage fans, sponsors, partners, and players, the NBA held its first-ever NBA Green Week in April 2009 at all NBA arenas around the country. As with subsequent Green Weeks, the league held auctions to support environmental efforts, sponsored hands-on community service projects, and featured special on-court apparel.

The inaugural 2009 Green Week also marked the launch of the NBA Green website at [www.nba.com/green](http://www.nba.com/green), including NRDC green tips for home and office, videos and news about team and player greening efforts, and links to resources such as NRDC's Greening Advisor for NBA. In early 2012, the NBA collaborated with NRDC to produce a public service announcement about the league's greening initiative. This PSA was shown in all arenas and on broadcast TV, including ESPN, ABC-TV, TBS, and TNT, as well as NBA-TV, and was viewed by more than 17 million people. The PSA showcased NBA's commitment to renewable energy, recycling, water conservation, and reduced packaging. NBA plans to air this PSA each Green Week in the future, and possibly during its All-Star Game and playoffs.

"One of the things we do well at the NBA is share information and best practices among all of our teams," said Kathy Behrens, executive vice president of social responsibility and player programs for the NBA. "We're



obviously incredibly competitive when it comes to the game and the action on the court. But off the court, we really focus on the things that we can learn from each other, and a lot of what you see on the NBA Green website is really designed to help educate our teams and fans.”

The NBA continues to sponsor Green Week each year, working closely with NRDC to continuously improve environmental attributes.

For example, the NBA engages in a number of environmental messaging initiatives. The league’s official outfitter, adidas, has provided All-Star players with shirts featuring the NBA Green logo and made from 50 percent recycled polyester. During nationally broadcast games throughout Green Week, players also wore NBA Green headbands, wristbands, and socks made from 45 percent organic cotton. NBA.com held an online auction of Spalding basketballs incorporating 40 percent recycled content and autographed by NBA players. The NBA Store, NBAStore.com, and select team retailers also offered organic cotton NBA Green t-shirts, hats, socks, headbands, and wristbands for purchase, along with recycled-content Spalding basketballs.

Each of the league’s 30 teams hosts Green Week community service events such as tree plantings, recycling drives, and park clean-up days to encourage fans to get involved in the league’s greening initiative. Teams have also hosted in-arena Go Green Awareness Nights, including promotions of “greener living” tips and auctions to support environmental protection organizations.

“Thanks to great guidance from the NRDC, the NBA and our teams continue to implement new measures to reduce energy consumption and waste throughout all of our business areas,” said Kathy Behrens. “NBA Green Week highlights the importance of environmental protection while encouraging fans to do their part by incorporating green habits into their daily lives.”

In 2010, league partner HP worked with the Miami HEAT, the Houston Rockets, and the Dallas Mavericks on special service projects throughout NBA Green Week, including a beach clean-up event, and refurbishing homes with Rebuilding Together.

Also during the 2010 NBA Green Week, the NBA Store in New York City hosted a footwear drive to collect slightly worn athletic shoes for donation to Hoops 4 Hope, a global nonprofit organization teaching life skills through basketball to youth in southern Africa. Customers who brought in shoes received a 20 percent discount on purchases of new athletic shoes.

During the 2011 NBA Green Week, the NBA and Sprint launched a Facebook application called “Unlimited Acts of Green,” designed to help fans make greener choices in their daily lives. The app included a list of green acts for fans to select from, including cell phone recycling, and displayed the resulting environmental benefits associated with all fan pledges, including amounts of greenhouse gases, electricity, and water saved.

Other NBA event greening initiatives have included:

- NRDC assisted in greening NBA’s EuropeLive tour in October 2008, which featured NBA games in four countries in Europe. The 02 arenas being used in London and Berlin were a showcase for sustainability, as they already had in place many environmental features. In London, this included the diversion of 100 percent of food waste for composting and 100 percent of used cooking oil for biodiesel; advanced recycling programs for glass, plastic, paper, and cardboard, which diverted 60 percent of all waste from landfills; a rainwater catchment and recycling system and other water conservation measures; enhanced transportation options that enabled 75 percent of attendees to take mass transit; and energy-efficient lighting, HVAC equipment, and building structure.

- NRDC began its NBA All-Star Game greening collaboration at the 2008 NBA All-Star Game in New Orleans by arranging for an energy audit of the New Orleans Arena and adjacent Louisiana Superdome and Convention Center. NRDC helped the NBA to improve the existing recycling program at the arena to include plastic bottles and aluminum cans, to procure 100 percent recycled content bathroom tissue at the arena, and to provide hybrid cars for staff transportation during the event.

- The 2009 All-Star Game in Phoenix provided the US Airways Center with a chance to showcase their newly installed solar power system. The 1,100-panel solar array, spanning 18,000 square feet atop a parking garage at the arena, is capable of generating approximately 332 MW of energy annually. That’s enough energy to power the US Airways Center for 26 Suns home games—the equivalent of eliminating the release of 44,000 pounds of carbon dioxide each year. The NBA also purchased Green-e certified windpower RECs from Arizona Public Service, the US Airways Center’s utility, to offset the equivalent of 1,500 megawatt hours of power used at the 2009 All-Star Game. Additionally, the NBA purchased carbon offsets for all generator use at US Airways Center during the All-Star Game, and for the All-Star Game Jam Session and NBA Block Party.

- The 2009 All-Star Game also incorporated comprehensive recycling and waste reduction efforts. An expanded recycling program was implemented at US Airways Center, NBA All-Star Jam Session, the NBA All-Star Block Party, the Phoenix Convention Center, and Heritage Square (during the NBA welcome party) for plastic bottles and aluminum cans. Recycling PSAs were aired in US Airways Center and at the Jam Session and NBA Block Party to remind all attendees to recycle their cans and bottles at all events.

- The 2009 All-Star Game also encouraged and promoted public transportation options with maps, schedules and information provided through the Jam Session website. Paper products, including Jam Session brochures, credentials, office copy paper, media guides, and tickets, were printed using soy inks on paper with post-consumer recycled content that was manufactured using windpower.

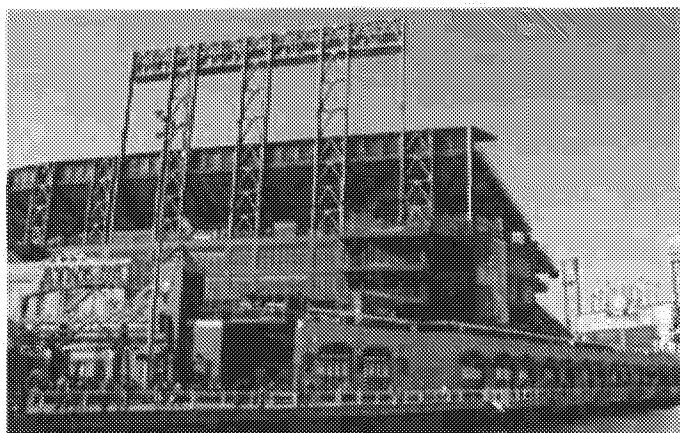
Subsequent All-Star Games have continued to expand on these positive environmental initiatives, incorporating individual measures appropriate to each venue. Some additional examples of NBA All-Star Game successes include:

- Ongoing purchase of renewable energy credits and carbon offsets to balance power consumed at the All-Star Games.
- Expanding recycling services in facilities used in All-Star events.
- Avoiding potentially harmful polyvinyl chloride (PVC) plastics in producing banners.
- Showcasing the use of an electric vehicle used for Jam Van, with solar panels powering interior accessories.

In addition, the NBA has partnered with host cities and recycling organizations, as well as companies such as Sprint, to conduct electronics recycling drives in conjunction with All-Star Games and Green Week. The NBA and its partner organizations encourage fans to bring electronics nearing their end of life to their e-recycling events, where they are recycled responsibly by e-Steward certified organizations. Fans dropping off electronics for recycling receive prizes such as tickets to NBA All-Star Jam Session, a four-day interactive basketball event featuring more than 500,000 square feet of NBA All-Star entertainment. During the NBA All-Star Games 2012 in Orlando, the NBA and Sprint collected 23,000 pounds of used electronics for recycling.

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## LESSONS FROM THE FIELD

**CREATE THE RIGHT WORK ENVIRONMENT:** For those just getting started or struggling to get green initiatives off the ground, Costa suggests going back to basics by creating the right work environment for success. “You’ve got to really circle the wagons. You need to create a different mindset and environment based on cooperation,” he explains. “Meet and talk through every aspect of these issues, from the financial to the emotional to the practical to the fundamental realities of your business and partners.”

**ESTABLISH A DIVERSE AND DEDICATED GREEN STEERING COMMITTEE (ESPECIALLY FOR PURSUING LEED):** Start by getting the right people together. “We’d recommend establishing a steering committee made up of a variety of people from many departments within the company and from external partners that come together and are dedicated to the process,” says Costa. “The desire and the resources all need to be in alignment to make it happen. No single person can get this done. You need a collaborative group of people with the vision, passion and commitment to put their money where their mouth is. That takes courage and conviction.”

**INVOLVE ALL PARTNERS:** Given the complex nature of ballpark services, the Giants involve all venue stakeholders including PG&E (sponsor), ABM Services (building and facilities management), Centerplate (hospitality and concessions), Toro Irrigation (landscape management), and Recology (waste management) to ensure successful ballpark-wide integration of green initiatives. They also recommend capitalizing on the opportunity to share your green story by having your partners assist you in telling it. Involving stakeholders will increase the volume of your voice and the penetration of the message.

**HOLD REGULAR GREEN MEETINGS TO STAY ON TOP OF MARKET TRENDS:** Costa likens the rapidly changing green-tech space (such as the lighting industry) to the Apple iPad. “What’s good yesterday may not be so good tomorrow, and you find yourself constantly questioning

when to invest in upgrades if newer and newer versions continue to be released,” he explains. “The iPad is actually a great analogy for what it feels like trying to stay on top of the many increasingly efficient technologies available in the marketplace.” For instance, Felder points out, “the packaging that was available five years ago wouldn’t have allowed us to be where we are now.”

The Giants use regular meetings with their partners to keep themselves informed on new products. “We do evaluations of our product use during every home stand and have regular meetings with our partners on an ongoing basis. We use a combination of internal staff research and the advice of external partners like PG&E, Recology and Centerplate to vet the market for new products and technologies,” says Costa. “Centerplate is a particularly helpful resource because they are able to learn a lot from working with a lot of venues across the country on these issues.”

“We also look for technological trends in the marketplace,” adds Felder. “ABM, our engineering group, has done a lot of work with us on lighting and does a lot of research on electronic products for us.”

**COORDINATE WITH OTHER BUYERS TO HELP WITH PRODUCT COST AND AVAILABILITY:** Partner with other teams, venues and even other companies in your area to harmonize purchasing requests and build the market for environmentally friendly products.

**GOING GREEN IS AN INVESTMENT:** “The single greatest issue that we face today is that it’s not inexpensive to go green. That’s just being flat-out honest,” say Costa. “You will need to spend some money.” Though Costa believes strongly in the benefits of increased efficiency (including resource savings, financial savings, favorable press, brand enhancement, environmental benefits, public health benefits and the strengthening of community ties), he says, “You are constantly balancing cost and the willingness of your partners to adapt.”

“Achieving LEED certification is a six-figure application process and requires you to devote staff resources almost exclusively to the LEED application,” points out Costa. “It took us about 14 months from the time we started at the beginning of 2009 until we got certified in March of 2010.” Felder agrees that large projects like pursuing LEED certification may be difficult to justify financially in the short term. “You could say that LEED certification was an expense that might have been hard to justify, but what we’re finding is that it really does pay off over time.”

**PURSUDE GREEN INITIATIVES INCREMENTALLY:** It’s often more affordable to pursue incremental upgrades and work your way around a facility. “No one can do it all at once, unless they have unlimited resources,” says Costa. “Most teams need to take on smaller, incremental initiatives that you orchestrate the right way, in concert with your whole system, to continue to make progress every day,” he explains. “We take a dogmatic, methodical approach to greening.”

# AMERICAN AIRLINES ARENA, HOME OF THE MIAMI HEAT



## ARENA STATS

**Location:** Miami, Florida

**Began Construction:** February 6, 1998

**Opened:** December 31, 1999

**Seating Capacity:** 19,600

**Owner:** Miami-Dade County

**Operator:** Basketball Properties Ltd.

**Venue Uses:** NBA games, WWE wrestling matches, family shows and concerts

**Construction Cost:** \$297 million (in 2012 dollars)

**LEED Certification:** Certified LEED for Existing Buildings

Operations and Maintenance in April 2009

## THE HEAT'S GREENING STORY: MOTIVATIONS, CHALLENGES AND LESSONS FROM THE FIELD

The Miami HEAT have been sports industry leaders in green building initiatives and comprehensive tracking of facility-wide resource use since American Airlines Arena became LEED-certified for existing buildings: operations and maintenance (EBOM) in the spring of 2009. For the better part of a year the HEAT worked on enhancing their operations in a race against the Atlanta Hawks to win the first LEED Certification for an arena in the National Basketball Association. The showdown culminated in a dead heat when the Green Building Certification Institute, a subset of the U.S. Green Building Council, awarded American Airlines Arena and Philips Arena, the home of the Hawks, LEED certification on the same day, April 7, 2009.

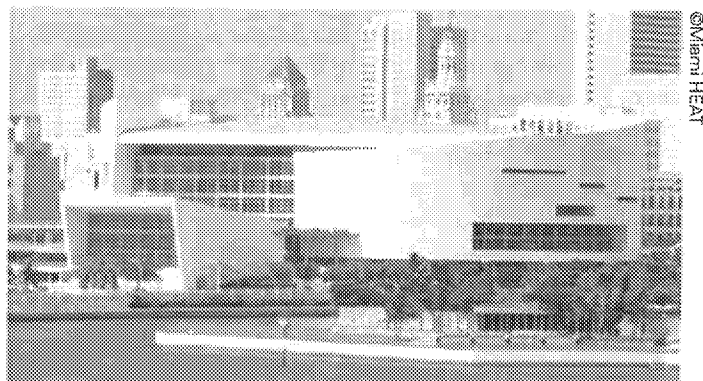
With a LEED certification under their belt, and many cost benefits and positive press mentions to boot, the HEAT are now working toward LEED recertification in 2014, which requires improving on all of their 2009 efficiency achievements.

**"IT'S A POINT OF DIFFERENTIATION FOR US FROM A BUSINESS PERSPECTIVE. IT PROVIDES A PLATFORM FOR US TO ATTRACT ACTS AND ENTERTAINMENT THAT WANT TO PLAY IN GREEN VENUES,"** says Eric Woolworth, president of the HEAT Group's business operations.

## WHY GO GREEN?

According to Jackie Ventura, operations coordinator for the HEAT Group, the direct benefits of greening and LEED certification include financial savings, attracting green-based sponsorships, brand enhancement, competitive advantage, raised community profile and improved company culture. "Sustainability equals savings. In one year, thanks to our greening and responsible energy consumption measures, we saved \$1.6 million," says Ventura. "We also attracted about \$1 million in new corporate sponsors, which include Home Depot and Waste Management, who aligned with our greening efforts as sponsors of our LEED initiative. Being environmentally conscious improves our brand's image so that we now talk with companies that never would have approached us before, such as Johnson & Johnson and Georgia Pacific."

The HEAT also include their green accolades in their pitch to attract performing artists to their arena. When the team first announced its LEED certification and ongoing commitment to greening in 2009, Eric Woolworth, president of the HEAT Group's business operations, said, "It's a point of differentiation for us from a business perspective. It



©Miami HEAT

## STANDOUT GREENING ACCOMPLISHMENTS

- ★ The HEAT's energy efficiency initiatives have enabled the AmericanAirlines Arena to consume 53 percent less energy than the average facility of similar size and use, according to EnergyStar's Portfolio Manager.
- ★ The organization replaced 240 lamps in the arena's concession stands and merchandise locations with compact fluorescent lights (14-watt bulbs replaced 60-watt bulbs). This move saves \$976 annually and recouped the capital investment in two years.
- ★ The team implemented a building automation system (provided by Johnson Control) to monitor and control heating, cooling and ventilation.
- ★ The HEAT reduced the heat island effect and saved energy by using a more reflective "white" roofing and underground parking.
- ★ The team also added 9,161 square feet of canopies to reduce the heat island effect.
- ★ In 2009, the HEAT achieved a 16.7 percent reduction in potable water use and saved more than \$5,000 in water costs through low-flow faucet and toilet upgrades and by increasing plumbing efficiency.
- ★ The HEAT save almost \$11,000 annually due to greater irrigation efficiency. All irrigation of planters and landscaped areas is done by a drip system or a soak system that applies water directly to the roots, and all lines have low-flow nozzles. Also, timers are used so that irrigation takes place in the middle of the night in order to minimize evaporation.
- ★ The HEAT permanently installed water meters to measure the consumption of potable water and water used in irrigating all landscaped areas. The meters are monitored on a weekly basis.
- ★ The HEAT established an environmentally preferable purchasing policy and a solid waste management purchasing policy (43 percent of purchases are sustainable).

provides a platform for us to attract acts and entertainment that want to play in green venues."

Woolworth explained that the HEAT pursued greening because they understood the influence their organization has in the community and marketplace. "Achieving LEED certification is a great affirmation of the AmericanAirlines Arena's commitment to energy conservation and environmentally responsible operations," said Woolworth at the announcement of the LEED certification. "Being among the first arenas in the U.S. to be LEED-certified, we hope to inspire businesses of all kinds to think green and make a positive impact on our earth."<sup>1</sup>

The HEAT became devoted to greening not only to show community leadership, improve the efficiency of their operations and benefit the environment, but also because the team wanted to seize the opportunity to be a trailblazer for professional sports. "The HEAT Group, the business operations behind the Miami HEAT team, prides itself on being an innovative organization," says Lorrie-Ann Diaz, director of marketing communications. "As a professional sports franchise, being competitive is part of who we are and what we do, and we're proud to be one of the first major professional sports facilities to achieve the incredibly important LEED certification."

Greening enabled the HEAT to attract positive press and create new community-based opportunities. "We knew that being the first NBA arena to be LEED-certified would attract great publicity," says Ventura, "but as we discovered that it was an exciting way to engage with the city and with the community, we realized how important it was to make greening a big part of our game. Our green work is a great avenue to introduce these concepts to people who don't have access to or don't yet care about these issues. It's a domino effect."

Ventura stresses the importance of magnifying the green message by leveraging the HEAT's brand. "We have so much power in this business. We have incredible access to so many people on a daily basis," she says. "We had over 1.5 million visitors to sporting and entertainment events last year alone. If you impact half of those people and they share it with a couple of other people, the impact adds up. Pretty soon we'll be doing a lot of good."

Manny Diaz, the mayor of Miami at the time of the HEAT Group's LEED certification, promoted the HEAT's greening work as a positive model for local businesses. "The AmericanAirlines Arena is a catalyst for all Miami businesses to invest in a greener future," he said. "The arena's commitment to the earth and our community paves the way for other companies in downtown Miami to follow that path and make a lasting difference."<sup>2</sup>

## WHERE TO START?

The HEAT Group first learned about greening opportunities from the NBA head office. In 2007 the NBA established a partnership with the Natural Resources Defense Council (NRDC) to enhance their environmental profile. As part of this program, during the summer of 2008 the NBA worked with NRDC to establish the Commissioner's Initiative on Sustainable Arena Operations and Team Practices. The league also circulated the NRDC Greening Advisor to help all NBA teams learn how to become greener.

The NBA's environmental commitment and NRDC's resources motivated the HEAT Group to find out whether they could achieve LEED certification. "When NRDC got together with the NBA and made some league-wide environmental recommendations, it really kick-started our interest in greening," says Ventura. "We began by looking into LEED to see if we could get certification. Lo and behold, just by doing the checklist on the U.S. Green Building Council website, we were pretty confident that we could pursue

## THE HEAT'S LEED CERTIFICATION COST-SAVING ANALYSIS BREAKDOWN

- \* Total LEED Project Cost: \$73,384
  - Registration: \$600
  - Certification: \$15,000
  - Expedited evaluation (optional): \$10,000
  - 550 internal staff hours: approx. \$47,592
  - Various manuals: \$192
- \* Total LEED Project Annual Savings: \$1,616,480
  - Energy savings: approx. \$1.6 million
  - Lighting annual savings: \$976
  - Efficient plumbing fixtures: \$5,440
  - Responsible landscaping: \$10,822

### COST SUMMARY

- \* Total Expense: -\$73,384 (\$25,792 out-of-pocket)
- \* Annual Savings: +\$1,616,480
- \* Green Sponsorship: +\$1,000,000
- \* **Full return on investment within one year, plus millions in ongoing annual savings.**

**"IT WAS GREAT TO SEE THAT BY BEING FISCALLY RESPONSIBLE WE WERE BEING SUSTAINABLE AS WELL,"**

says Jackie Ventura, operations coordinator for the HEAT Group.

certification."

To work on the LEED application, the HEAT Group put together a "green team" made up of internal staff members and Laura Crave, a LEED Accredited Professional and director of marketing for Dade Paper, one of the HEAT's major vendors. "As LEED certification is such an important element of our green mission, we decided to complete the project in-house, and luckily, most of the staff in our operations department have been part of the HEAT Group for a long time," says Ventura. "Everyone had a solid foundation in the operation of the building, so we knew this was something we could pursue without third-party involvement."

According to Ventura, the HEAT recognized the value of training their staff in efficient building practices while pursuing certification. "Our team of facility managers, engineers and maintenance staff took ownership of the project and made the commitment to become LEED experts

themselves," she says. "We were able to complete the process in record time, and the accomplishment was more meaningful because our own team of dedicated professionals made it happen."

Thanks to strong support from the executive staff, particularly Eric Woolworth and general manager Kim Stone, the HEAT Group was able to register the AmericanAirlines Arena for LEED certification on November 18, 2008, just a few months after learning about the LEED opportunity. "Everyone was really on board with getting the initiative done. Our goal was to unveil our certification during the NBA's Green Week in April 2009, and our president and business operators said, 'Make this happen' and 'You have my support,'" says Ventura. "This required that the internal green team's regular duties be delegated to other staff members in the interim. The staff all supported being more sustainable and were happy to contribute to the project wherever they were needed."

The HEAT started with the LEED checklists of prerequisites and credits required to achieve EBOM certification. "We began with the prerequisites because obviously without those you can't follow through with certification," explains Ventura. "We were surprised that we already qualified for all of the LEED prerequisites because, honestly, most of our prior decisions were fiscally motivated."

### CHALLENGES: OVERCOME AND ONGOING

Pursuing LEED certification requires investment, including significant up-front capital and staff time. However, the costs associated with green upgrades and LEED certification are minimal relative to the significant utilities savings available for a major facility like the AmericanAirlines Arena. "We spent \$1,594,309 during the 2008 calendar year. If we ran the AmericanAirlines Arena at the current national average, we could potentially be spending approximately \$3,010,000 annually on energy consumption each year," explains Ventura. "So thanks to our greening work and responsible energy consumption, which is 53 percent more efficient than the average arena, we now save approximately \$1.6 million on energy costs annually."

Ventura credits the HEAT's efficient and straightforward LEED application process to consistent and knowledgeable staff, impeccable recordkeeping, responsible utility consumption and easy-to-use electronic blueprints. "We found that most of our practices were already LEED compliant," she says. "We have always been very vigilant about tracking our consumption with electricity, water, gas, et cetera. I have spreadsheets and electronic records of all facility-wide consumption from the opening of the building in 1999, so we were confident that we would meet all of the LEED baselines."

The greatest challenge the HEAT faced was accurately and efficiently completing all of the LEED application paperwork. "We found filling out all of the paperwork in-house was more of a challenge than any other," says Ventura. "Many of the LEED credits required us to put our typical (and some new) practices, like buying recycled content and EPA-recommended efficient products, down on paper as



**"WHILE LEED WASN'T NECESSARILY THE IMPETUS FOR A LOT OF OUR EFFICIENCY PROJECTS, IN THE LONG RUN IT HAS SERVED AS THE REASON WHY WE KEEP ADHERING TO AND IMPROVING UPON THE GREENER PRACTICES WE HAD IN PLACE BEFORE,"** says Ventura.

formal policies. None of our prior standard operating procedures addressed these types of practices, so LEED served the dual purpose of allowing us to update our SOPs." The LEED process motivated the HEAT Group to advance environmentally friendly purchasing across more product categories, including cleaning supplies, all paper products, lighting and electronics.

Ventura attributes the ease of implementing green purchasing programs at AmericanAirlines Arena to the HEAT's longstanding vendor relationships and loyalty. "We are very loyal to our vendors. They are also loyal to us and make sure we are the best we can be," she says. "For example, one of our suppliers, Dade Paper, has been in the building since day one. They were really great about going through all of our requirements and communicating about upcoming products. They assisted us in a seamless transition to new products, such as 100 percent recycled paper towels and EPA-recommended foam soap."

Thanks to these strong relationships, the HEAT Group was also able to rely on partners for sponsorship of its LEED-based green initiatives. "We've had an account with Home Depot for about 10 years and they sponsored our first year of LEED certification," says Ventura. "Waste Management has also been in the building since day one. They were very supportive of our LEED application process as well and continue to partner with us to significantly expand our recycling programs. They provide all of the balers, totes, garbage cans and signage for branding. They have also sponsored community outreach programs like our e-Recycling drive in April 2012. The recycling proceeds from all of the electronics went directly to Miami-Dade County Public Schools to aid in their efforts to upgrade technology in classrooms across our county."

The HEAT's vendors have played a key role in watching the market for new technologies as well. "We make most of the building products purchasing decisions internally for things like lightbulbs and office supplies," explains Ventura. "In terms of our cleaning supplies and larger pieces of equipment, we rely on our vendors to bring us new technologies as they come out. We are very lucky that we have a good relationship with our major vendors, and they are very vigilant about bringing these new products to us. They are very aware that we have high standards and are working on recertification."

The HEAT Group has already started working toward LEED EBOM recertification in 2014, which requires improving on all 2009 green initiatives. This time the organization is aiming for LEED Silver certification. "For recertification, 2009 is our baseline. Our consumption must stay even or below our 2009 figures and we need to implement new green initiatives," Ventura explains. "For example, we've completed installation of virtual frequency drives on the air handlers and have begun adding them to our chilled water pumps as well. We upgraded our hot water gas boiler to a high-efficiency model, which has effectively reduced our gas consumption to a third of what it was in fiscal year 2009—49,907 therms versus 15,574 therms." The HEAT Group has also been upgrading more of its arena's lights to LEDs and purchasing office products with a higher percentage of post-consumer recycled content. "Switching up to LED lightbulbs, which are now more readily available, is logical because although they cost more initially, the extended life expectancy will reduce replacement and long-term spending and will help us earn recertification," says Ventura. "We are very conscious of the decisions we make to ensure they are in line with the recertification process. Thanks to our comprehensive data collection and green building success to date, we can also easily justify new greening projects by showing our executive staff a cost-benefit analysis of why an up-front investment is a good idea in the long term."

## LESSONS FROM THE FIELD

**GREENING AND LEED CERTIFICATION HAVE MULTIPLE DIVIDENDS; YOU WILL LIKELY RECOUP YOUR INVESTMENT:** According to Ventura, the direct benefits of greening and LEED certification include financial savings, green-based sponsorships, brand enhancement, competitive advantage, raised community profile and improved company culture. Despite devoting more than \$70,000 to their LEED application, the HEAT's return on investment for all of the green projects included in their LEED process was less than one year, with millions in resource savings since then. "Sustainability equals savings. In one year, thanks to our greening and responsible energy consumption measures, we saved \$1.6 million," Ventura notes. "We also attracted about \$1 million in new corporate sponsors, which include Home Depot and Waste Management, who aligned with our greening efforts as sponsors of our LEED initiative."

**USE THE READILY AVAILABLE ONLINE RESOURCES TO BREAK DOWN THE GREENING PROCESS:** "The most important takeaway is not to be overwhelmed by the process, particularly for LEED," says Ventura. "When you begin it can seem very overwhelming, but NRDC, the U.S. Green Building Council, and the EPA have a ton of resources for people trying to be greener and/or achieve LEED certification. It is not as overwhelming or daunting as it seems if you have your information in order and use these resources as a guide."

**“WE TREND OUR EVENTS TO SEE WHEN CONSUMPTION PEAKS FOR CHILLED WATER AND ELECTRICITY SO THAT WE CAN ADAPT AND BECOME MORE EFFICIENT,”**

says Ventura. **“IF YOU DON’T HAVE THAT INFORMATION AVAILABLE TO YOU, THE BASIC DATA, THERE IS NO WAY TO GET A HANDLE ON WHAT YOU’RE USING AND HOW TO IMPROVE.”**

**TRACK YOUR RESOURCE USE FACILITY-WIDE AND KEEP COMPREHENSIVE RECORDS:** “We’ve been keeping records since day one. We know how much we’ve consumed and spent since the day we opened,” says Ventura. “It has been so helpful to create those baselines for LEED certification. We have numbers, graphs, consumption trends and demand analysis for all of our utilities that can be used as a quick reference guide as needed. We also use the data to help us gauge our budget projections and monitor our peak consumptions.”

**USE ELECTRONIC BLUEPRINTS OF YOUR FACILITY:** “We recommend having accurate final blueprints for your facility. We use computer-aided design. The blueprints are extremely helpful for calculating square footage and dividing building space by type,” explains Ventura. “Some LEED credits require you to upload blueprints, so having electronic versions—and someone who can manipulate the documents to showcase only the areas requested for LEED—is very beneficial.”

**THERE ARE PLENTY OF GREEN ALTERNATIVES TO LEED CERTIFICATION:** LEED isn’t the only way to be greener and save money. “Form an eco-committee, join EPA’s EnergyStar program, increase recycling, reduce water and paper use, adopt LEED’s green cleaning requirements, green your supply chain, promote carpools, use renewable energy and raise public awareness,” suggests Ventura.

**ENGAGE FANS WITH GREEN ACTIVITIES ON THE CONCOURSE:** “We had Pepsi’s Dream Machine on the concourse. Fans and employees could deposit plastic bottles and turn them into points, which could be redeemed for coupons at local establishments and prizes including mini HEAT souvenirs,” says Ventura. “We installed the Dream Machine recycling attraction in partnership with PepsiCo, and the revenue from recycling the plastic bottles and aluminum cans was donated to funds that lend support to U.S. veterans with disabilities, which was another added incentive for fans to participate.”

**ATTRACT ADDITIONAL PRESS BY HAVING MULTIPLE UNVEILINGS AT ONCE:** “We were able to extend our ‘green limelight’ to about three months by coordinating multiple unveilings at once,” says Lorrie-Ann Diaz. “We unveiled our LEED certification three weeks after our 3,400-square-foot, low-energy-consumption LED screen was installed and continue to promote our certification on the front fascia of the building.”

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## ENDNOTES

1 “AmericanAirlines Arena Awarded Prestigious LEED® Green Building Certification.” Heat News, NBA.com (April 15, 2009). [www.nba.com/heat/news/aaarena\\_awarded\\_LEED.html](http://www.nba.com/heat/news/aaarena_awarded_LEED.html) (accessed June 19, 2012).

2 Ibid.

**Pages intentionally omitted**



case study

# STAPLES CENTER, HOME OF THE LOS ANGELES CLIPPERS, LOS ANGELES LAKERS, LOS ANGELES KINGS, AND LOS ANGELES SPARKS



## STAPLES Center

### ARENA STATS

**Location:** Los Angeles, California

**Began Construction:** March 31, 1998

**Opened:** October 17, 1999

**Seating Capacity:** 20,000

**Owner:** AEG

**Operator:** AEG

**Venue Uses:** NBA, WNBA and NHL games, concerts, family shows, Grammy Awards and other high-profile events.

**Construction Cost:** \$407 million

**ISO 14001 Certification:** December 2010

## STAPLES CENTER'S GREENING STORY: MOTIVATIONS, CHALLENGES AND LESSONS FROM THE FIELD

STAPLES Center in downtown Los Angeles is undoubtedly one of the busiest arenas in the world, hosting more than 250 events and nearly 4 million guests each year. The arena is home to four professional sports franchises—the NBA's Los Angeles Lakers and Los Angeles Clippers, the NHL's 2012 Stanley Cup Champion Los Angeles Kings and the WNBA's Los Angeles Sparks—and also hosts many high-profile events, including the annual X Games and Grammy Awards. Other notable events include the 2004 and 2011 NBA All-Star Weekends, the 2002 NHL All-Star Game, the 2000 Democratic National Convention, and the 2011 World Figure Skating Championships.

Since the arena opened in 1999, STAPLES Center's operations team has aimed to run it as efficiently as possible. With the help of AEG, STAPLES Center has become a leader in environmentally better practices, boasting a 1,727-panel solar array atop its roof; high-efficiency lighting, equipment, and energy management systems; and waterless urinals, among other initiatives. AEG and STAPLES Center developed an environmental management system (EMS) to guide employees in reducing the environmental impact of STAPLES Center's daily operations. As a result, the STAPLES Center became the first U.S. arena to receive an ISO 14001 certification in 2010.

## WHY GO GREEN?

Efficiency and innovation have always been important to STAPLES Center's management team. "We're always reminded by our ownership to save energy, save water, identify state-of-the-art technology and pass on these practices and lessons whenever possible," says Bill Pottorff, vice president of engineering for STAPLES Center and Nokia Theatre L.A. Live. "When you realize that this is truly a priority to our organization, you have to look for ways to do that. Beginning with the planning and design of STAPLES Center in 1998, this has always been our way of life."

"AEG's corporate sustainability program—the collection of information and recognition of the environmental priority—formally started in 2006 when our music branch AEG Live raised the question to our CEO," explains Jennifer Regan, global sustainability director at AEG, STAPLES Center's owner and operator. "They said, 'Hey, we've got artists and staff who care about the environment; we need to address our environmental impact.' The CEO realized that our clients and our content division were telling us that we needed to answer these questions. He turned to the company's corporate office and asked them to put together a green team."

## WHERE TO START?

"STAPLES Center's management team have always been early adopters of innovative technology while being proactive in connecting with their corporate, government and community partners to identify best uses for these technologies," says Regan. "For example, they began installing electric charging stations for their guests beginning in 1999 when the arena first opened."

## STANDOUT GREENING ACCOMPLISHMENTS

- ★ STAPLES Center is the first U.S. arena to achieve ISO 14001 certification for an environmental management system (EMS), a written program setting forth environmental goals and practices.
- ★ The venue uses AEG's Ecometrics system to measure and report environmental data and performance.
- ★ The center implemented a variety of conservation measures through its EMS to reduce electricity consumption overall by 12 percent.
- ★ It installed a 1,727-panel solar array covering 25,000 square feet of the arena's roof. The 345.6-kilowatt system supplies 5 to 20 percent of the building's energy use (depending on load) and produces 525,000 kilowatt-hours annually, saving an average of \$55,000 per year.
- ★ In 2012 a comprehensive lighting retrofit replaced almost 3,000 halogen fixtures throughout the facility with more energy-efficient LEDs, saving nearly \$80,000 per year—2 percent of total energy costs.
- ★ Low-voltage lighting relays control the sequence and operation of all task, general and event lighting, illuminating groups for specific times and uses.
- ★ The facility switched to electronic ballast instead of magnetic ballast.
- ★ It uses variable-speed drives on all air handlers and one chiller.
- ★ The center has time schedules for and photo cell control of exterior lighting.
- ★ Super-efficient three-phase motors are in use.
- ★ All 178 conventional urinals were replaced with waterless urinals—for total annual savings of more than 7 million gallons of water and about \$28,200 in direct water costs.
- ★ The center documents and achieves at least a 50 percent landfill diversion rate annually in full compliance with California AB 2176, collecting cardboard, wood pallets and electronic waste and, with the help of Levy Restaurants, collecting glass, plastic and aluminum beverage containers.
- ★ Over 90 percent of STAPLES Center cleaning products have green certifications.
- ★ 100 percent of all toilet paper, paper towels and copy paper are a minimum of 30 percent post-consumer recycled content.
- ★ Electrical vehicle charging stations have been installed in adjacent parking lots and structures.
- ★ Public transportation is encouraged through partnerships with Los Angeles Kings, with ticket discounts offered to metro riders and other tenants and promoters.
- ★ Secure bike racks were installed on the venue property, and management is reviewing contracts for bike valet programs for major events.

Most of STAPLES Center's environmental initiatives began with behind-the-scenes efficiency projects. "A lot of it was just best practices in the industry," explains Pottorff. "One of our first projects was putting medium-volt 4160-volt variable frequency drives on our primary chiller here. That was about a 2¼-year payback. Those drives are typically done on 480-volt chillers, and we took it up a level. People had been doing them on medium-voltage chillers for a couple of years, which led us to believe we could go further. It was a fun project because we took a 480-volt drive card and put it into our 4160-volt chiller and basically tricked it. We got everything tweaked and fine-tuned and it's been running great ever since."

AEG's corporate sustainability department set out to develop an environmental program that would provide employees with guidance and the tools necessary to improve AEG's environmental performance. "We had a sustainability committee with leaders from each business unit meeting to develop a sustainability road map. We also included the STAPLES Center team on that committee as their wealth of experience and success stories helped everyone to see how beneficial an environmental and efficiency priority could be,"

Regan explains. "From the AEG side of the story, beginning in 2008, we engaged industry experts and consultants to help us identify projects and develop the core components of our environmental program, which we now call AEG 1Earth. The core components of the program are AEG's environmental policy, long-term goals and an environmental performance tracking system, AEG Ecometrics. As the home base and flagship venue, STAPLES Center was the test ground for early versions of Ecometrics and several other projects."

In 2008, STAPLES Center participated in a number of energy and water audits, one of which NRDC arranged through the L.A. Department of Water and Power, to analyze the building's energy and water use and identify opportunities for further efficiency enhancements. "We did an energy assessment and identified low-hanging fruit," says Regan. "The energy audit ultimately confirmed the importance of projects that our engineers had already proposed. Ultimately, the results helped the management team prioritize the opportunities and identify rebates." Among these confirmed efficiency opportunities were lighting and equipment retrofits, onsite solar panels, and waterless urinals, all of which have since been implemented.

STAPLES Center also implemented numerous lighting and equipment upgrades. “We’ve taken basically every incandescent bulb out on all three suite levels and replaced them with LEDs. That’s continuing in other areas of the building,” says Pottorff. These lighting retrofits, expected to be completed in 2012, will replace more than 3,000 halogen fixtures with LEDs and will save an estimated \$80,000 annually in energy costs. “Beyond energy savings, rebates from the utility and lowered labor costs also bring down the costs of this investment,” notes Sam Kropp, vice president of building operations for STAPLES Center and Nokia Theatre L.A. Live. “We had our capital outlay and then the utility reimbursed us for a portion of that cost. And, I think most notably, it’s the lack of labor needed to change these incandescent bulbs day in and day out that is most appealing. We have about 160 suites that basically had a minimum of six fixtures each, and now we’ve replaced all that with LEDs. That’s a big savings we realized there.”

One of the STAPLES Center’s biggest projects in 2008 was the installation of a 1,727-panel solar array covering 25,000 square feet of the arena’s roof—the largest solar array at any sports facility in the world at the time. The 345.6-kilowatt system produces 525,000 kilowatt-hours annually, saving an average of \$55,000 a year. “On a sunny day with a low base load of energy use, the panels provide up to 20 percent of energy use,” explains Regan. “Because we have over 250 events per year, including mega-events like the Grammy Awards and NBA and NHL playoffs, the panels provide only 5 percent of our total annual energy use.”

By 2009, with a number of impressive efficiency projects under their belt, AEG and STAPLES Center wanted to go a step further in formalizing their environmental program. “We wanted to take on our biggest challenge yet: engaging our staff, vendors and tenants,” says Regan. “Collectively, we decided to develop a formal environmental management system to systematize their efforts. They evaluated the prospect of pursuing LEED certification for the building but ultimately decided to go after ISO 14001 certification of their EMS instead.”

Regan explains AEG and STAPLES Center’s decision: “We were introduced to two key environmental systems in 2007: LEED and ISO 14001. We started to use the LEED standards internally to identify building projects, but they didn’t provide much guidance on how to engage and train staff. Having already performed a formal energy audit, AEG was comfortable that the STAPLES Center’s operations and engineering team were proficient in terms of building efficiency in line with many of the LEED guidelines,” she continues. “We understood LEED’s value, but our challenge wasn’t in knowing what technology to put in place; it was in understanding how to engage other parts of our venue in the environmental program. So we thought that the most important thing was to engage our employees, and we selected the standard we could use to that end.”

Unlike LEED’s fixed, environmental infrastructure-based requirements, an EMS is a self-defined written framework

describing an organization’s environmental best practices and goals, including how to integrate environmental responsibilities into its staff training and job responsibilities. “ISO 14001 does not have a rating system—it identifies the activities and topics that must be addressed but allows the applicant to define how it will address them,” Regan explains. “As ISO 14001 is self-defined, some people say it has potential to be a weaker third-party certification. But unlike LEED, ISO 14001 requires an annual third-party audit to ensure you comply with your self-defined program as well as with local and federal laws. LEED might be stronger about prescribing and ranking what environmental features should be implemented, but ISO is stronger in defining how thoroughly to train and communicate your initiatives to staff and how to assign environmental responsibilities throughout your operations,” she points out. Although LEED has always been on the agenda for STAPLES Center, Regan says, “LEED doesn’t have an annual surveillance audit and doesn’t get too prescriptive in terms of staff engagement. Since a lot of our efficiency programs depend on how people manage our buildings, ISO was the first priority for us.” The ISO 14001 emphasis on staff training and annual auditing were key reasons why STAPLES Center pursued ISO certification first.

Examining each department and the role of its staff members in the company’s environmental performance was an essential piece in the ISO and EMS process. “We did a formal environmental impact assessment and met with the head of each department and identified which job positions in their department had any impact on the environmental impacts of the company,” Regan explains. “This process helped the company understand where the impacts were and identified additional ways our staff could play a role in reducing certain impacts. Everyone has a small impact on consumption of paper and electricity. But a thorough review of each department’s environmental impact helped us identify specific initiatives for each department. For example, only security could impact the energy consumption of the security scanners by unplugging them at a certain times, while our box office staff could identify additional recycling receptacles that would be needed because their office uses more paper than our other offices.”

Developing an EMS has helped expand the environmental program consistently throughout the entire company. Starting in 2010, STAPLES Center created an organization-wide green team that engages all arena divisions in department-specific environmental initiatives. “We engaged all levels of management to create an arena-wide green team,” says Regan. “We had relied heavily on operations and engineers, but now with the green team, we are able to engage guest services, human resources, security, our premium-seating staff and our food and beverage partner, Levy Restaurants, which really didn’t happen till we did the ISO certification.”

Getting the EMS in place required setting aside time each week to focus on documentation work. “The average time to develop an EMS is three hours a week for two months,” says Regan. “This mainly encompasses documenting practices

## AEG/STAPLES ISO 14001 Certified Environmental Management System

### Standard Operating Procedures and Training Include:

- \* Chemical acquisition forms
- \* Energy conservation guidelines
- \* Environmentally preferable procurement guidelines
- \* Environmental activities risk ranking
- \* Generator testing procedures
- \* Green event services
- \* Landscape and hardscape management plans
- \* Hazardous communication program
- \* Hazardous and universal waste program
- \* Integrated pest management plan
- \* Lighting policy
- \* Paint management plan
- \* Refrigerant audit log
- \* Solid waste guidelines
- \* Spill prevention plan
- \* Water conservation guidelines

that haven't been previously recorded, and occasionally identifying new practices to implement." There is also time spent with ongoing documentation for the EMS, she notes. "The average time to maintain an EMS is three hours per month. This includes training refreshers, green team meetings, identifying new things to implement and updating documentation to reflect changes in process or new practices." Although there is no cost to developing the EMS documentation or process, there are costs to achieve ISO certification. According to STAPLES Center management, the external audit and ISO 14001 certification initially cost between \$8,000 and \$10,000, with an annual recurring cost of between \$1,500 and \$3,000, depending on the size of the venue.

The documentation process may be time-consuming, but it pays off. "Everything we do has to be documented, and it was a big deal to set it up—it took over a year," recalls Pottorff. "But once you get it, and get the certification, you realize that it's really beneficial because every little bit of information that we could ever need is right there on the computer."

### CHALLENGES: OVERCOME AND ONGOING

One of STAPLES Center's more impressive environmental initiatives was the replacement of the arena's 178 water-flush urinals with waterless urinals in 2008. But this project's

approval took some time, explains Pottorff. "My first challenge with the urinals was many years ago. Not many people know this, but I tried to get them in the building two years before they actually happened," he says. Waterless urinals were still an unseasoned technology at the time, and many cities and facilities were still squeamish about their performance in large facilities. "They weren't really approved by the city of Los Angeles, and nobody really knew what to do about them," Pottorff continues. But STAPLES Center's operations and engineering team was adamant about the fixtures' water savings and fought to pilot this technology at the arena. "Funny enough, two years later they're in the building and everybody loves them," Pottorff laughs.

Before 2008, each of the STAPLES Center's urinals consumed 44,000 gallons of water a year. The 178 Falcon waterless urinals that replaced these flush fixtures save more than 7 million gallons of water per year and about \$28,200 annually in direct water costs. "We have estimated that we are saving approximately \$2,350 per month at STAPLES Center in direct water costs, not factoring in sewer charges and any other municipal taxes," says Pottorff. "Each urinal saves roughly 4.5 hundred cubic feet [of water] per month."

STAPLES Center is a big advocate for the waterless technology and has been able to debunk a lot of the uncertainty surrounding the fixtures with the success of its installation. "People ask us about them all the time," says Pottorff. "Our response is always that they are fantastic, as long as you do the maintenance exactly as it's recommended." Maintenance mainly includes routinely flushing out the pipes and replacing cartridges. "We actually send a camera down random pipes annually, just to have a look in the pipes and see if anything is going wrong," Kropp adds. "And we haven't had any issues yet. We do get an occasional hiccup with it, but it's not like before when we had the water urinals and people would throw paper towels in. We don't have stoppages like we used to with the standard flush urinal." Continuous training of staff about the upkeep of the urinals has contributed to this success, Pottorff explains. "Training is ongoing, and the company, Falcon, will come out whenever we ask them to at no charge and we'll have a refresher course for the maintenance staff," he says.

Even with their strong existing environmental achievements, STAPLES Center executives are constantly looking for ways to improve. Increasing recycling rates is at the top of their to-do list. "We are really working on public recycling at the arena, and that's something AEG | Earth and Jennifer Regan are key partners in," says Kropp, "in trying to get the appropriate capital to get the right receptacles and branding in the public spaces, as well as the PSAs, and trying to fit that in with game script every night on our center bowl scoreboard. So we're hopeful that we'll succeed in that endeavor, which has been a challenge the last five years."

The current waste program achieves an event waste diversion rate of up to 35 percent, but the operations team is still looking to incorporate a public-facing program, Kropp says. "From an operations standpoint, my biggest challenge right now is finding an aesthetically pleasing receptacle that



## AEG Ecometrics Data Collection System

### Resources Consumed:

Natural gas  
Electricity  
Water  
Recycled water  
Fuel (propane, diesel, petrol, fuel oils 1-4)  
Solvents (hazardous)  
Paper—janitorial/office  
Green cleaning products  
Solar power  
Biodegradable food service disposables  
Sustainable food (local/organic)  
Renewable Energy Credits (RECs)

### Wastes Generated:

Solid waste—landfill  
Recycling  
Lamps (controlled)  
Electronic (controlled)  
Batteries (controlled)  
Solvents (hazardous)  
Petroleum (hazardous)

### Emissions Calculated:

Carbon (CO<sub>2</sub>)  
Nitrous Oxides (NO<sub>x</sub>)  
Sulfur Dioxide (SO<sub>2</sub>)

will handle trash and the sorting of recoverables in the public areas, or at least a portion of them, as opposed to just tackling them back-of-house.”

STAPLES Center had a public recycling program in 2005, but the public participation rate was so low that the labor and materials cost of maintaining separate bins was detracting from the more effective back-of-house recycling program. STAPLES Center made the hard decision to focus on behind-the-scenes recycling, explains Kropp. “Our primary efforts right now are back-of-house before and after events, where we do source separation with our operations staff, our

food concessionaire Levy Restaurants, and our community recycling partner, the Los Angeles Conservation Corps.”

“We do a lot of source separation—that’s the key to our diversion here,” says Kropp. “Our operations team coordinates the collection of cardboard from all of our tenants, vendors and office staff as well as a robust lightbulb and battery collection that even encourages staff to bring them in from home. For cans and bottles, we allow both Levy Restaurants and the Los Angeles Conservation Corps to take the deposit value [of the recyclables], but we take the diversion rate. Levy Restaurants does sorting in kitchens and behind the bars, and the Los Angeles Conservation Corps will do post-event sorting from the bowl, where, quite frankly, people don’t pick up after themselves, and that’s the time to capture those recoverable pieces: a cardboard popcorn bin, an Aquafina bottle, an aluminum can. We’ll have about eight people here from the Los Angeles Conservation Corps, and every night we’ll focus on a specific recoverable.”

In 2011, the arena started a composting program in its kitchens. “Our food composting program with Levy Restaurants has taken an incredible amount of weight out of our waste stream, saving a lot of money,” says Kropp. “It’s a back-of-house program in two of the main kitchens, where most of the food is prepared. It just takes training with the back-of-house chefs, new chefs and kitchen staff. So when they’re cutting up a watermelon, waste is going into green receptacles, which are transferred to the loading dock and picked up for composting.” The arena has already seen success with this program; in April 2012, for example, it diverted 4.78 tons of food waste from going into the trash.

“The next three steps are linking together the public recycling and composting with fan engagement and sponsorship engagement,” says Regan. “AEG’s partnership with Waste Management is key to addressing these needs and engaging fans in the program. Their sponsorship includes a recycling information kiosk and a Random Acts of Recycling fan engagement program to reward fans for recycling at games and events.”

Engaging fans is “certainly a primary element we have talked about,” Kropp adds. “In-arena incentives are one tactic we are introducing to get fans involved. You know, if you take the recoverable item back to the refreshment stand, we have a designated receptacle and maybe we give you a discount off your next Coke. Some kind of incentive to really make the fan think twice about just throwing [a recyclable item] in a trash bin.”

“We need to cross over into where every guest at STAPLES Center will know that our operations are green,” adds Regan. “ISO was good at getting all of our employees engaged. But I really think that if we put a full-court press on engaging the public in our recycling program, and eventually public composting, we’ll achieve a new level of community pride in the venue.”



## LESSONS FROM THE FIELD

**WITH PROPER MAINTENANCE, WATERLESS URINALS SAVE WATER AND MONEY:** In 2008 STAPLES Center became one of the first large arenas to install waterless urinals, and it has had great success with them. “We have people calling us saying, ‘We’ve heard good things (and/or bad things) about waterless urinals; we’ve heard they smell, etc.,’” Pottorff says. “And we always tell them the same thing: If you do the maintenance correctly, you won’t have any problems.” Making sure the pipes get flushed out and cartridges get replaced routinely is key, explains Kropp, “and we do that quarterly, and religiously.”

**DEVELOP AN ENERGY MANAGEMENT SYSTEM TO ORGANIZE YOUR EFFORTS:** An environmental management system helps to streamline data around sustainability initiatives and provides comprehensive documentation of your progress toward environmental goals. “As a result of the EMS, there was a whole new level of awareness,” says Kropp. “OK, so we get that battery bucket in place, then where else are batteries being used? We set up additional buckets and communicate that to staff. Then we document where the batteries go when we’re done with them. So when we get audited—‘These batteries were taken at this point and this time, and disposed of properly, taken by this particular entity’—that whole process is documented,” he adds.

**AN EMS CAN PAVE THE WAY FOR LEED:** The extensive documentation collected by an EMS can also be helpful with potential building certifications down the road. “That’s kind of the reason we went that route; we knew ISO 14001 was a little bit easier to get than LEED, but also a step toward LEED—it kind of paves the road,” says Kropp. “I generally like to describe an EMS as the program for your staff and LEED as the program for your building,” adds Regan. “I believe they are complimentary, and although they can exist separately, I think an EMS helps people who are pursuing LEED EBOM.”

**AN ISO CERTIFICATION ENHANCES THE LEGITIMACY OF YOUR PROGRAM TO THE PUBLIC:** “Transparency is essential for the success of any corporate environmental program,” said Lee Zeidman, senior vice president and general manager of STAPLES Center, Nokia Theatre and L.A. Live, when the ISO certification was granted. “By making our environmental management systems available for third-party review, AEG and STAPLES Center are backing up our 1Earth commitments with aggressive actions to limit our environmental footprint.”<sup>1</sup>

## ENDNOTES

<sup>1</sup> “STAPLES Center Awarded Environmental Management System Certification,” PR Newswire (December 14, 2010). [www.prnewswire.com/news-releases/staples-center-awarded-environmental-management-system-certification-111848539.html](http://www.prnewswire.com/news-releases/staples-center-awarded-environmental-management-system-certification-111848539.html) (accessed July 19, 2012).

# ROSE GARDEN ARENA, HOME OF THE PORTLAND TRAIL BLAZERS



## FACILITY STATS

**Location:** Portland, Oregon

**Began Construction:** July 12, 1993

**Opened:** October 12, 1995

**Seating Capacity:** 19,980

**Owner:** Portland Arena Management

**Operator:** Portland Arena Management

**Venue Uses:** Professional basketball (NBA), hockey (WHL), concerts, family shows, conventions

**Construction Cost:** \$400 million (in 2012 dollars)

**LEED certification:** Certified LEED Gold for Existing Buildings: Operations and Maintenance, in January 2010

## THE TRAIL BLAZERS' GREENING STORY: MOTIVATIONS, CHALLENGES AND LESSONS FROM THE FIELD

In the sports greening space, the Trail Blazers are true to their name as industry leaders in green building and making a business case for environmentally intelligent operations. In January 2010 the Rose Garden Arena became the first professional sports arena in the United States (and in the world) to achieve LEED Gold certification under the U.S. Green Building Council's Existing Buildings standard.

Three years later, the Blazers are still achieving incremental resource savings in energy, water and waste each year that continue to greatly benefit the team's bottom line. To date the Blazers have saved close to \$500,000 in pure profit after recovering their up-front green investments in full.

### WHY GO GREEN?

When it comes to environmental stewardship, the Blazers' fans don't just believe it's an important business consideration, they expect it to be there. Many companies in Portland recognize that they have a responsibility to reflect their community's passion for environmental protection in order to attract and maintain a strong clientele. The Blazers realized several years ago that their organization is no different.

The Rose Garden Arena embraced greening to become a community and market role model while also proving the business case of greening. "Being in what is recognized as one of the most sustainable cities on the planet, the Portland Trail Blazers are proud to play a role in Portland's environmental leadership," says Justin Zeulner, director of sustainability and planning for the team. "Ideally, we are playing a role to best represent the core values of our city and surrounding communities."

The Blazers see greening as way to give back to their community. For Zeulner, it comes down to one key question: How can the Trail Blazers make their community better? Through their greening work, the Blazers have found a way to marry community outreach programs with operational savings to create a sustainable program with multiple dividends.

### WHERE TO START?

Like most teams, the Blazers started their greening work by getting buy-in and feedback from as many staff members and partners as possible. They created a "sustainability team" made up of interested people from all departments. "The vision to become the leader of sustainability in the sports and entertainment community was initiated using a team approach, not only involving our staff, vendors, partners and business affiliates, but also embracing the support of our fans," says Zeulner. "We feel our accomplishments and progress to fulfill our future goals are only achievable

**"THE PORTLAND TRAIL BLAZERS ARE PROUD TO PLAY A ROLE IN PORTLAND'S ENVIRONMENTAL LEADERSHIP. IDEALLY, WE ARE PLAYING A ROLE TO BEST REPRESENT THE CORE VALUES OF OUR CITY AND SURROUNDING COMMUNITIES,"** says Justin Zeulner, director of sustainability and planning for the team.

using a team effort, which includes support from our staff, management, fans, visitors, suppliers, vendors, business partners and our community. Attempts have been made to connect with all of these stakeholder groups, soliciting feedback and suggestions.”

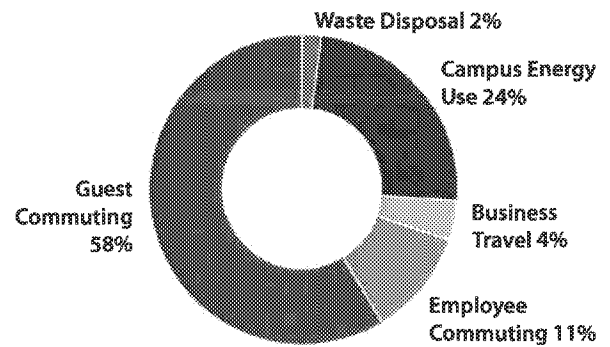
Next, the Blazers decided to hire an external consultant to guide their resource measurement, develop a plan for upgrades and implement greening improvements. “Recognizing that we have a role to play in these larger community objectives, such as enhancing our environmental impact, we started our programs by hiring a local, nationally recognized sustainability consultant, Green Building Services, to accurately measure our current carbon footprint and provide us with a road map toward making significant reductions to these impacts,” explains Zeulner. “This involved an extensive Scope 3 analysis and development of several sustainable policies, procedures and programs.”

Once the Blazers had mapped out their environmental impacts, they developed a “sustainability charter” to better frame the environmental mission statement that would guide their sustainability efforts. The charter is the Blazers’ “driving document that serves as a sustainability road map,” according to Zeulner. “The core charter developed to guide our sustainability initiatives, including the development of goals and strategies for each segment of our carbon footprint, was compiled by our sustainability team, a group of over 35 employees from all departments and levels of authority,” he explains. “This group was tasked by our president and executives to develop a path that would lead us to become and remain the leader of sustainability within our industry.”

Zeulner emphasized that top-level support greatly benefited the growth of the Blazers’ green program. “Our sustainability efforts have included senior leadership support, to go along with unfettered dedication by our department leaders and front-line staff,” he says. “Executives have paved the way with resources and vision, enabling environmental enhancement projects to be achieved.”

Thanks to strong executive leadership on greening, Zeulner’s sustainability team was able to quickly get green initiatives happening in departments throughout the Rose Garden’s operations. “Food and beverage management has found creative ways to source local and organic foods and developed incentive programs to excite concession and kitchen staff to recycle and compost,” Zeulner notes. “Operations teams have implemented purchasing strategies to ensure that we have eliminated toxic cleaning products from our facilities, that strict environmental policies are met regarding renovation and maintenance projects, and that

#### Portland Trail Blazers Carbon Footprint



we continue to strive toward zero waste. Guest Services find creative ways to help inform and encourage fans to recycle and compost while visiting the Rose Garden Arena. These are just a few examples.”

#### CHALLENGES: OVERCOME AND ONGOING

The Blazers decided early on that tracking was essential to their greening program. This decision led to two important investments: first, hiring the Green Building Services consulting team, and second, undertaking an extensive sustainability and carbon footprint analysis (see the above graph for the breakdown of the Blazers’ carbon impacts).

Zeulner says that the time and money his team invested in the up-front measuring was quickly returned in resource savings as he was able to more easily identify the “low-hanging fruit.” “These assessments and footprint analysis provided a road map for us to implement strategies toward maximizing our environmental performance,” says Zeulner. “We started with easy wins that had paybacks of less than a few years, such as energy efficiency projects, implementation of advanced recycling and food waste composting operations, and implementation of environmental purchasing policies. These initial efforts have resulted in hundreds of thousands of dollars of operational savings, with payback met after just about a year.”

By starting with the green projects with the greatest return on investment, the Blazers were able to gain momentum to pursue larger initiatives, like LEED certification. “While these projects and procedures were implemented, we made the decision to seek LEED certification for existing buildings through the U.S. Green Building Council,” says

**“WE STARTED WITH EASY WINS THAT HAD PAYBACKS OF LESS THAN A FEW YEARS, SUCH AS ENERGY EFFICIENCY PROJECTS, IMPLEMENTATION OF ADVANCED RECYCLING AND FOOD WASTE COMPOSTING OPERATIONS, AND IMPLEMENTATION OF ENVIRONMENTAL PURCHASING POLICIES,”** says Zeulner. **“THESE INITIAL EFFORTS HAVE RESULTED IN HUNDREDS OF THOUSANDS OF DOLLARS OF OPERATIONAL SAVINGS, WITH PAYBACK MET AFTER JUST ABOUT A YEAR.”**

Zeulner. "Implementation of our sustainability initiatives, including LEED, included in-depth meetings with all facility departments, contracted service providers, vendors and suppliers (this includes waste haulers, contractors, etc.). During the meetings, we clearly set expectations, provided context and review of our environmental policies and programs, included training about these topics and developed metrics that would be tracked for all areas to ensure compliance."

The Blazers sought out additional outside guidance for their LEED process as well. These outside partnerships provided Zeulner's team with expertise on specific topics, such as onsite solar (NRDC) and carbon offsets (Bonneville Environmental Foundation). "Successful development of extensive sustainability programs requires partnerships with public and private enterprises. We sought out advice and leadership from organizations grounded in environmental values such as the NRDC, the U.S. Green Building Council, Cascadia, the Living Future Institute, the Bonneville Environmental Foundation and the EPA," says Zeulner. "These organizations provide unique perspectives pertaining to implementation of best practices and context to more complex issues, such as procurement policies. Our success in reducing environmental impacts would have been more challenging without the support of these partners."

Financing efficiency upgrades and other green initiatives is a constant hurdle, but Zeulner points out that the up-front capital to fund environmental programs can come from a variety of sources. "In addition to internal capital resources, we applied for and received local and federal grant funding," he says. "Grants included financial resources to help implement energy-efficiency projects, recycling and food waste compost programs, installation of electric-vehicle charging stations and bike infrastructure endeavors. As of the

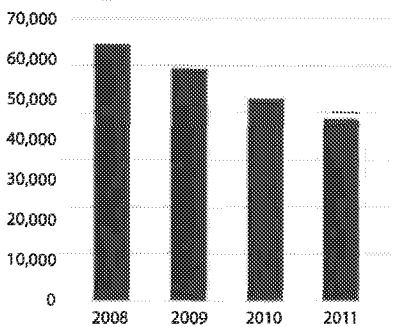
end of the 2011 calendar year, we have saved close to \$1 million while investing about \$500,000, in less than three years."

The Blazers were awarded LEED Gold certification, the highest level of LEED certification awarded to any major sports venue to date, in January 2010. Despite this impressive accomplishment, the Blazers still push for ongoing savings across the board (see adjacent graphs of the Blazers' resource savings). Zeulner explains: "We were bestowed with Gold during the first part of 2010. This was a significant milestone for us, but we quickly continued to keep our momentum. We implemented further deep building retrofits; invested further in bike and electric-vehicle infrastructure; developed partnerships with local environmental nonprofits to advance their mission; invested in offsetting 100 percent of our energy, gas and water consumption impacts; joined Business for Innovative Climate & Energy Policy; and helped found the Green Sports Alliance to share best practices within our industry and further the impacts that leveraging professional sports can have on larger global initiatives."

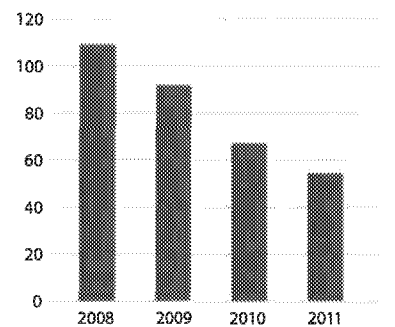
The Blazers have been able to use their greening work to strengthen their community presence and benefit the local economy by building for the future. "We are now assessing projects that go beyond the four walls of our arena and attempting to inspire growth toward development of Eco-Districts," says Zeulner. "This includes looking at things like district energy, shared water management systems, harvesting rainwater, developing gray-water reuse strategies, investing in district-scale food waste-to-energy systems, furthering renewable energy, reducing transportation-related impacts to our region and other projects related to maximizing environmental enhancements."

So far the Portland public has been very receptive to the Blazers' efforts and continue to support the team's expanding

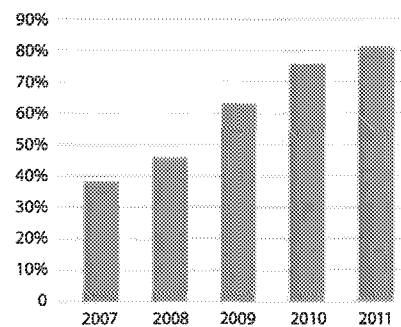
**Electricity Savings Per Game-Day Event**  
kWh/Event Day



**Water Savings Per Game-Day Event**  
CCF/Event Day



**Waste Diversion Per Game-Day Event**  
Diversion Rate



**"FUNDING ENVIRONMENTAL PROGRAMS CAN COME FROM VARIOUS SOURCES. IN ADDITION TO INTERNAL CAPITAL RESOURCES, WE APPLIED FOR AND RECEIVED LOCAL AND FEDERAL GRANT FUNDING,"** says Zeulner. **"AS OF THE END OF THE 2011 CALENDAR YEAR, WE HAVE SAVED CLOSE TO \$1 MILLION WHILE INVESTING ABOUT \$500,000, IN LESS THAN THREE YEARS."**



greening program. "Our efforts have only received positive feedback, including thousands of positive media articles, local achievement awards and immense fan applause," observes Zeulner. "The operational savings alone have proved these efforts worthwhile, but beyond the business case, we have supported larger community goals, supported brand development, enhanced the fan experience and made significant connections."

### STANDOUT GREENING ACCOMPLISHMENTS

- ✦ **Recycling:** More than 80 percent of operations waste is diverted from local landfills. Recycling stations for visitors and a food waste composting program with vendors divert about 1,000 tons annually. 100 percent of food waste is composted.
- ✦ **Transportation:** More than 30 percent of Rose Garden attendees use public transportation or alternatives such as bicycle commuting. The team subsidizes transit passes for staff and uses bikes and electric vehicles for onsite operations. 43 percent of Rose Garden staff use alternative transportation.
- ✦ **Energy, Gas and Water:** In addition to upgrading to energy efficient lighting and low-flow plumbing fixtures, the Trail Blazers partnered with Pacific Power and the Bonneville Environmental Foundation for the purchase of 100 percent renewable energy programs and Water Restoration Certificates for the Rose Garden. The Blazers cut water use by 17 percent.
- ✦ **Purchasing:** The Trail Blazers developed partnerships with suppliers for sustainable purchasing, including more than 95 percent compostable food and beverage serving containers and materials, 100 percent recycled content trash liners, reusable commodities that replace disposables where feasible, green-certified chemicals and equipment, and sustainable food and beverage alternatives for fans.

**"THE OPERATIONAL SAVINGS ALONE HAVE PROVED THESE EFFORTS WORTHWHILE, BUT BEYOND THE BUSINESS CASE, WE HAVE SUPPORTED LARGER COMMUNITY GOALS, SUPPORTED BRAND DEVELOPMENT, ENHANCED THE FAN EXPERIENCE AND MADE SIGNIFICANT CONNECTIONS,"**

says Zeulner.

### LESSONS FROM THE FIELD

**GREENING, INCLUDING LEED CERTIFICATION, CAN BE AN INVESTMENT THAT PAYS OFF:** While the up-front investment in major greening upgrades is significant, the payoff is greater. The Blazers invested \$560,000 in operations improvements around the Rose Garden. By 2011 the team had recouped \$411,000 in energy savings, \$165,000 in water savings and \$260,000 in waste diversion savings, with a total savings of \$836,000. "As of the end of the 2011 calendar year, we have saved close to \$1 million while investing about \$500,000, in less than three years," says Zeulner. "We forecast that our savings will reach over \$1 million by the end of 2012."

**DEVELOP AN ORGANIZATION-WIDE GREENING CHARTER TO GUIDE YOUR EFFORTS:** Once the Blazers had executive buy-in and a sustainability team assembled, they developed a sustainability charter to better frame the environmental mission statement that would guide their sustainability efforts. "Establishing a charter, our driving document that serves as a sustainability road map, led to the U.S. Green Building Council assignment of LEED Gold certification for the Rose Garden arena in 2010, the first and only existing building in professional sports worldwide to achieve this designation," says Zeulner. The charter included the Blazers' sustainability mission statement, which helped the team plan out and prioritize their green initiatives.

**SET PROGRESSIVE GOALS:** Zeulner advocates setting progressive goals to spur your green program to higher levels. The Blazers set a goal of carbon neutrality, which requires that they offset more carbon than they produce at the Rose Garden (evaluated using a Scope 3 carbon assessment with the 2007–2008 base year). The Blazers aimed for the highest level of LEED certification to date and achieved it with the guidance of their outside consultants and partners. The Blazers also established a corporate sustainability initiative to incorporate environmental considerations into all internal decisions.

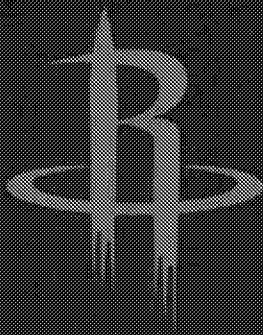
**REMEMBER TO CONSIDER IMPROVEMENTS TO EMPLOYEE AND PATRON HEALTH VIA GREENING:** Thanks to the LEED certification process, the Blazers significantly improved indoor environmental quality at the Rose Garden. They did this by implementing an internal air quality plan, banning smoking, ensuring all ventilation and filter systems met ASHRAE standards, promoting occupant comfort by providing lighting controls and thermal comfort, and using 54 percent green cleaning products and 73 percent green cleaning equipment to improve indoor air quality.

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# TOYOTA CENTER, HOME OF THE HOUSTON ROCKETS



## ARENA STATS

**Location:** Houston, Texas

**Began Construction:** July 21, 2001

**Opened:** October 6, 2003

**Seating Capacity:** 18,400

**Owner:** Harris County—Houston Sports Authority

**Operator:** Clutch City Sports and Entertainment

**Venue Uses:** NBA games, AHL games, concerts, family shows, and conventions

**Construction Cost:** \$255 million (in 2012 dollars)

**LEED Certification:** LEED Silver for Existing Buildings: Operations and Maintenance in January 2010

## THE ROCKETS' GREENING STORY: MOTIVATIONS, CHALLENGES AND LESSONS FROM THE FIELD

The Toyota Center and Houston Rockets had environmental responsibility on their radar even before the arena opened in 2003. "We started before we got into the building. We have always been very environmentally conscious at the Toyota Center—it's always been a part of how we operate," says Sarah Joseph, director of community relations at the Rockets.

The push towards operational efficiency and eventually pursuing LEED certification stems from their green-minded owner, Leslie Alexander. "Environmental responsibility is extremely important to Mr. Alexander," says Scott Manley, director of event operations at Toyota Center.<sup>1</sup> The Toyota Center was the fourth NBA arena to receive LEED certification, earning LEED Silver for Existing Buildings: Operations and Maintenance in 2010. "Applying for LEED was done on a voluntary basis, so we looked at that as an opportunity to take a leadership role," says Manley.

**"TOYOTA CENTER HAS A UNIQUE OPPORTUNITY TO SERVE AS AN INDUSTRY LEADER IN THE FUTURE OF SUSTAINABILITY. WE ARE OPERATING IN A MORE ENVIRONMENTALLY CONSCIOUS MANNER AND EDUCATING THE MILLIONS OF PATRONS THAT ATTEND TOYOTA CENTER EVENTS EACH YEAR REGARDING WAYS THEY CAN HELP,"** says Rockets chief executive officer Tad Brown.

## WHY GO GREEN?

By being environmentally responsible in their building and team operations, the Houston Rockets view their green program as a way to lead by example in the community. "Through our efforts with Green Games, aggressive recycling, public outreach initiatives featuring Rockets players, environmental support efforts, and many other programs, we are providing a significant educational support mechanism to our community and fans alike," says Rockets CEO Tad Brown.<sup>2</sup>

By showcasing environmental initiatives at the venue and team community events, the Toyota Center and the Rockets strive to engage their fans and their community in environmentally responsible behavioral changes. This strong commitment to environmentalism is reinforced by the venue's achievement of LEED certification in 2010. "In keeping with [owner] Leslie Alexander's vision of environmental responsibility, we have dedicated many resources over the past few years to gain certification within the LEED program with regards to sustainability and operational efficiency," Brown explains. "This certification serves as validation that our aggressive approach to energy management, recycling and waste reduction programs have made a difference here at Toyota Center and in our community."<sup>3</sup>

The Toyota Center was the first professional sports facility in Texas to get LEED certification in 2010, and, according to Greg Poole, director of facility operations, was among only two or three other buildings in Houston that were LEED-certified at that time.<sup>4</sup> As of 2012, there are now more than 100 LEED-certified buildings in the Houston area.<sup>5</sup>

## WHERE TO START?

Though the Toyota Center has long been involved in environmental initiatives, “in 2008 we really made it more formal and started the LEED certification process,” explains Joseph. “We launched initiatives on two separate fronts to ensure that environmental awareness was at the center of daily operational activities for Rockets and Toyota Center. First, we began the application process for Toyota Center to become a LEED-certified facility. Secondly, we also established a Rockets Green Committee to develop platforms for guiding our green programs that would be inclusive of staff, fans, and others in the Greater Houston Community.”

“On the LEED certification side, Mr. Alexander, our CEO Tad Brown, our CFO Marcus Jolibois, our Assistant GM Scott Manley, and people on the facilities side were involved. Our Director of Facility Operations, Greg Poole, spearheaded our overall efforts to get the LEED certification,” says Joseph.

For the Rockets, LEED certification started with collecting baseline data at the building. “When beginning the LEED process, it was important to undergo a comprehensive building survey to establish a baseline from which to expand,” Joseph continues. “We partnered with a local engineering firm to assist with the LEED application process.” Poole and Manley, along with an eight-person staff, centered the LEED process around five key areas: energy, air quality, water use, reduced chemicals use, and educational outreach.

Aiming for EnergyStar recognition guided the Rockets’ energy efficiency initiatives. Poole and his team used EnergyStar Portfolio Manager to compare their building’s energy use to similar buildings, which was helpful in gauging their building’s energy intensity. “We were always really aggressive in trying to reduce our energy and our footprint,” Poole said. “We wanted some validation of what we were doing.”

However, this sort of energy comparison can be problematic, Poole notes, since as of yet EnergyStar does not include a sports venue category. “Currently EnergyStar does not have a specific rating or grouping for arenas and stadiums. Arenas attempting to get the points within LEED that are associated with EnergyStar have to submit any data they have, with regards to energy consumption, in hopes that EnergyStar qualifies us in some way.”

Another focus area was water use at the arena. The team decided to pursue landscaping efficiency points, reducing their landscaping water use by 50 percent by using native and drought-tolerant plants and installing a drip irrigation system that waters plants at the roots and reduces evaporation. The arena also installed low-flow faucets, toilets, and urinals with automatic sensors that reduce water use by 30 percent compared to conventional building code.

The operations team also addressed air quality at the arena, exceeding American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) requirements.

## STANDOUT GREENING ACCOMPLISHMENTS

### ENERGY

Through numerous energy efficiency improvements, the arena has reduced overall electricity use by more than 27 percent since 2003, earning EnergyStar recognition. Initiatives include:

- ✦ Engaging local entities in retro-commissioning practices
- ✦ Installing a Building Automation System
- ✦ Installing compact fluorescent light bulbs (CFLs) throughout the venue, saving \$70,000 annually
- ✦ Installing motion light sensors in offices
- ✦ Purchasing renewable energy credits from energy provider

### AIR QUALITY

- ✦ Increasing indoor air quality exceeding ASHRAE standards, including entry mats that reduce particulates entering building, and MERV 14 air filters on air handlers that reduce energy use

### WATER

- ✦ Achieving a 50 percent reduction in landscaping water use by using native plants and installing a drip irrigation system
- ✦ Installing low-flow faucets, toilets, and urinals, which reduce potable water consumption by 30 percent

### REDUCED CHEMICALS USE

- ✦ Reducing pesticide use by using Integrated Pest Management (IPM)
- ✦ Introducing a high performance green cleaning program including Green Seal-certified products

### ENVIRONMENTAL EDUCATION

Earned LEED Innovation points for education programs, including:

- ✦ Green Committee projects
- ✦ “Green” environmental awareness games
- ✦ Community outreach efforts
- ✦ Public outreach initiatives featuring the Rockets players
- ✦ E-cycling events and tree planting events

## ROCKETS GREEN COMMITTEE GOALS

- ★ Be a leader in the Houston community on environmental best practices.
- ★ Drive community activation on environmentally responsible behavior changes.
- ★ Increase community awareness of Rockets' environmental efforts.
- ★ Advance Toyota Center efforts towards LEED certification.

## GREEN COMMITTEE ACCOMPLISHMENTS

- ★ Received the 2011 Mayor's Proud Partner Award for Green Initiatives
- ★ Changed behavior within office—lights off policy, recycling of paper and plastic items
- ★ Established the "Green Team of the Game Program"—for each game, youth from schools, non-profits, and sports teams volunteer to pick up recyclable items in the stands and throughout the arena; 400 youth participate each season
- ★ Receive ongoing coverage in local media for green initiatives



"We implemented an indoor air quality program that reduces particulates in the air by going above and beyond the recommended MERV 13 filters to MERV 14 filters used by our air handlers," says Poole. "This reduced particulates in the air as well as energy costs on the air handling units themselves by modifying the type of filter used." Entry mats that reduce particulates from people entering the building were also installed.

Another priority was reducing chemical use in the building. The arena achieved this by training staff in Integrated Pest Management techniques, which reduces the use of pesticides. The cleaning staff also began purchasing green cleaning products, including Green Seal-certified products.

The last focus area of the Toyota Center was creating an educational outreach program, which earned them Innovation points with LEED. This program meshed with the simultaneous efforts of the Rockets Green Committee, which was working to generate environmental awareness with fans, staff, and the local community.

"The Green Committee is made up of a cross section of folks from different departments from all levels of the organization—from coordinators to upper management," explains Ken Sheirr, senior director of marketing operations. "There were about ten people on that committee to help us establish the green policy and procedures that were eventually implemented,"

The Rockets Green Committee kicked off their program by engaging and educating their fans on environmental initiatives. "We were one of the first two NBA teams to have an environmental awareness game," says Sheirr. "We basically used that game as an opportunity to communicate our environmental views to our fans. We did things like having our mascot wear a green costume and including environmentally-friendly items such as recyclable cups and canvas bags as part of the night's giveaways. We brought in representatives who are involved in environmental issues throughout the community and let them use that as a platform to distribute their pamphlets or literature. We displayed environmental facts on the screen throughout the game. We've been doing all that for about four years. That was our first major initiative outside of the LEED process."

The next step was getting their staff involved in their program. The Rockets Green Committee instituted organization-wide initiatives to reduce environmental impacts around the facilities, starting with small changes. "We removed all paper cups from the coffee areas, encouraging everyone to use mugs," explains Sheirr.

"We installed automatic sensors that would turn off the lights in offices when people left the room. We sent out communications on the importance of electronics and powering down. We have big recycling stations with graphics set up throughout the administrative area where you can bring in your lightbulbs and batteries from home and we'll

**"WE WERE ONE OF THE FIRST TWO NBA TEAMS TO HAVE AN ENVIRONMENTAL AWARENESS GAME,"** says Ken Sheirr, senior director of marketing operations. **"WE BASICALLY USED THAT GAME AS A PLATFORM TO COMMUNICATE OUR ENVIRONMENTAL VIEWS TO OUR FANS."**

recycle them for you. We've done that over the last few years and come up with a few new things to do each year, just to get folks engaged."

These initiatives have made a big difference at the arena, according to Poole. "We have increased our recycling tonnage from just a few tons each month to over 14 tons each month on average," he says. "We implemented a no trash can policy for individual spaces like offices and cubicles... [I]nstead we provided centralized waste stations that separated recyclable material from general waste. This created an opportunity for each person to have to get up and walk to the station and at that point it made them think about what they were discarding and not just throw everything into the general waste stream."

The Rockets also approached local organizations to assist in environmental educational outreach and green community events. "One of the main groups we've worked with is 'Keep Houston Beautiful,'" says Hai Duong, senior community relations coordinator. "They've been a wonderful and major resource in helping us find projects and locations. They've helped us find other partners as well such as the Houston Housing Authority or the Houston Arboretum and many other organizations as well."

This influence has not gone unnoticed; the Rockets won the 2011 Mayor's Proud Partner Award for their green outreach initiatives and community events. Initiatives included a "The Green Team of the Game Program" where youth from schools and social organizations volunteered to help pick up recyclable items during Rockets home games; 5,000 reusable water bottles given out at games; community cleanup events and tree planting events; and an annual "Recyclefest" event collecting electronics, books, clothing, and shoes for recycling and donation. In 2011, the event's organizers collected 14,242 pounds of electronics for responsible recycling; three blue crates, 150 bags, and 10 boxes of clothes and shoes, donated to the Salvation Army; and 12 boxes of books, also donated to the Salvation Army. The Rockets have collected nearly 100,000 pounds of electronics for recycling since launching the program.

## CHALLENGES: THOSE OVERCOME AND ONGOING

Earning LEED's Energy points was no small task for the Houston-based arena, whose 750,000 square-foot building is a challenge to keep cool in the summer months, where temperatures hover in the mid-90s an average of 99 days per year. "To cool down the building for an event takes serious amounts of power," Poole says. The building hosted 150 events in 2009, so a high-efficiency cooling system was crucial in order to achieve the necessary energy reductions. When events are not scheduled at the arena, Poole's team makes sure to shut down as many building components as possible.<sup>6</sup>

"We have reduced our overall consumption by 27 percent from when we first opened and our annual goals are to continue finding ways to reduce electrical consumption by 3 percent to 5 percent each year," he says. "This was accomplished by lighting retrofits and equipment modifications, as well as creating the correct culture within our operations that designated energy management as one of the highest priorities in our daily business."

While pursuing LEED gave the Toyota Center a road map to environmental initiatives at the arena, the application process itself was a challenge. "The more [building features] you submit, the harder it is," Poole says. "We're not a typical office building. The information we're supplying is a little bit different from what they want to see. We have to make arguments back and forth for why we feel like we're matching what they're asking for." The Rockets ended up bringing on a consultant from Riehl Engineering to provide day-to-day support for the complicated application process.

Despite these challenges, the Toyota Center is determined to build on its LEED Silver certification and strive for higher certification levels. "We intend to continue improving on our current list of programs and implementing new ones with the eventual goal of reaching the next level of certification," says Joseph.

## LESSONS FROM THE FIELD

**ESTABLISH A GREEN COMMITTEE AND SET GOALS:** The Rockets established a Green Team with representation across the organization. Goals and objectives were determined during initial Green Team meetings, which led to developing a comprehensive environmental program. According to their USGBC project profile, "Seemingly the most important item the project team identified for the success of this project is the necessary cultural shift which must occur with both event attendees and concessions to make LEED certification a reality."<sup>7</sup>

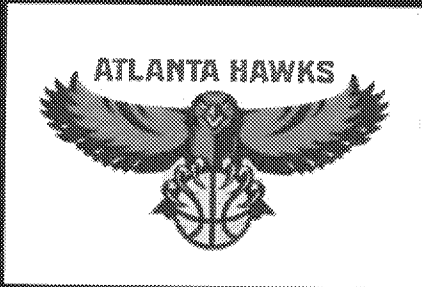
**ENGAGE YOUR COMMUNITY IN YOUR ENVIRONMENTAL EFFORTS:** With more than 1.5 million fans visiting the arena annually, the Toyota Center has a considerable influence in the community. "Toyota Center has a unique opportunity to serve as an industry leader in the future of sustainability," says Brown. "We are operating in a more environmentally conscious manner and educating the millions of patrons that attend Toyota Center events each year regarding ways they can help." Events that address local environmental issues are a great way to engage the community and educate fans about the environment. "For us, one of the major initiatives from a community standpoint is tree planting, especially now in Houston coming out of a terrible drought over the last summer that led into January of 2011. There was so much damage done to the green space in Houston and the landscape. What we really want to do is figure out a way to get involved in that, whether it's just going out organizing tree-plantings or figuring out a way to raise money," says Joseph.

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## ENDNOTES

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# PHILIPS ARENA, HOME OF THE ATLANTA HAWKS



## ARENA STATS

**Location:** Atlanta, Georgia  
**Began Construction:** June 5, 1997  
**Opened:** September 18, 1999  
**Seating Capacity:** 18,729 (basketball) and 21,000 (concerts)  
**Owner:** Atlanta-Fulton County Recreation Authority  
**Operator:** Atlanta Spirit, LLC  
**Venue Uses:** NBA/WNBA pro and collegiate basketball games, WWE wrestling matches, family shows, and a variety of concerts  
**Construction Cost:** \$298 million (in 2012 dollars)  
**LEED Certification:** Certified LEED for Existing Buildings: Operations and Maintenance in April 2009

## THE HAWKS' GREENING STORY: MOTIVATIONS, CHALLENGES AND LESSONS FROM THE FIELD

The Atlanta Hawks have a competitive green streak that came out when they vied with the Miami HEAT to become the first NBA team with a LEED-certified home arena. For eight months, the Hawks worked hard to achieve LEED Certification for Existing Buildings: Operations and Maintenance (EBOM), and the team was awarded the LEED certification on April 7, 2009, becoming the first NBA arena in the world to achieve this certification for an existing facility. Today, many NBA arenas have achieved LEED certification including the Miami HEAT, the Orlando Magic, Houston Rockets, and Portland Trail Blazers.

To earn certification the arena invested in a variety of green improvements almost a decade after the building first opened. These upgrades included: HVAC, chiller, and lighting retrofits; reflective roof materials that reduce cooling needs; and water conservation measures such as low-flow bathroom fixtures that have cut water usage by 2 million gallons.

### WHY GO GREEN?

"The building was built with sustainable thoughts in mind as we've always been interested in the environment and our effect," says Barry Henson, vice president of operations. However, Henson explains that as new technologies and building standards were being developed, the Hawks became increasingly interested in how they could further improve. "When we started talking about really getting involved and moving our position forward on greening our arena ownership, executives and marketing group were asking us what we could do better," says Henson, "and that got us thinking about the next level of efficiency and improved operations."

For the Hawks, greening was kicked off by two interests: maximizing operations efficiency, and competitiveness. The LEED green building certification intrigued the Hawks, particularly as it appealed to their desire to be the first arena to achieve LEED certification. "We spoke to other arenas but found no others going with LEED. LEED has gone through so many innovations and there are a lot of things that better fit an office building or school than a 24-hour operating arena like ours," says Henson. "When we decided to pursue LEED certification it helped us blaze a few trails for the U.S. Green Building Council."

### WHERE TO START?

The Hawks operations team began by weighing the pros and cons of different greening initiatives and programs to assess which most fulfilled their primary objective of high operational efficiency. "We started by looking into areas such as carbon credits and buying renewable energy credits (RECs), but those are areas that people get involved in that don't really change their operations or policies," says Henson. "LEED was the only answer for us because it gave us the ability to document our policies, make changes where we needed to, and engage ourselves in the entire greening process."

The Hawks brought together a core group of interested staff members from operations, event planning, and marketing to work with a local green building consultant called Southface. This green team led the charge on greening and LEED process, explains Henson, which ultimately also relied on feedback and buy-in from all staff. "Every employee in the arena had a role in changing how we do things, in assembling information and also in researching other greening initiatives out there. It was a total team effort here," Henson emphasizes.



## STANDOUT GREENING ACCOMPLISHMENTS

- ★ Low-flow flush toilets, aerator changes and low-flow shower heads as well as management of the cooling system reduced water consumption to save more than 1.95 million gallons of water per year.
- ★ Philips Arena electrical consumption has seen an 8 percent reduction year over year, saving more than 4.5 million kilowatt-hours per year. Philips Arena uses approximately 20 percent less energy than all other U.S. arenas that house two professional sports teams (Philips hosts both the Hawks and WNBA's Atlanta Dream).
- ★ Philips Arena sends its plastic, aluminum, glass, cardboard and paper waste to SP Recycling.
- ★ Philips Arena sends over 12 tons of food waste per year to be turned into compost that is sold and used locally.
- ★ Paper products, including paper towels, bathroom tissue, and copier paper, are all 100 percent post-consumer recycled content.

The Hawks began their on-the-ground work by implementing more environmentally conscious cleaning practices. "The first big change we made was moving towards green cleaning. That was a big change because everyone was used to using bleach, ammonia, and other chemicals," says Henson. "We had training and staff integration in order for our green cleaning staff to get everyone on board. The chemical supplier that we started working with, Southeast Link, has what they call a 'Green University.' So they'll bring a gentleman out who trains our staff as often as we need to make sure that everyone understands the proper operation of the greener equipment and products. They do training both onsite and at their headquarters."

## CHALLENGES: THOSE OVERCOME AND ONGOING

The Hawks looked to their peers for greening inspiration. When they were unable to find any LEED-certified arenas to use as a model, Henson's team worked on identifying individual greening projects that the Hawks could take on. "We just wanted to find out the greening initiatives at the other arenas. For example, composting was an initiative we pulled in from another arena," explains Henson.

The Hawks also turned to both publically available resources and a local consultant for advice on which green products to use and how to upgrade their systems. "We have worked with the EPA on some of our initiatives and have used their online resources for guidance," says Henson. "We

also worked with Southface on the LEED process, which was a big help to us. We went through some training at their headquarters on certifying buildings and green projects. They helped provide us with a lot of information on how to pursue LEED certification and we took a lot of cues from them from an operational standpoint."

The Hawks had some challenges finding enough space to sort and manage their recyclables onsite, as well as initial local hauling issues. "From a waste diversion standpoint, we are on such a small footprint here that we had to get creative about how to handle those recycled materials and find a company that would accept our recyclables," says Henson. "But we overcame those issues and increased our diversion rate from 5 percent to about 20 percent, if you include the compost diversion. That takes a lot of weight out of our compactors and really reduces our waste bill as well. It's good to be able to divert something and get it to a location where it can be reused."

On the composting side, the Hawks had to work out how to best keep their composting facilities clean and sanitary for employees to manage. "Our composting program is active throughout our back of house. We started doing only the kitchens and food areas but we then expanded into all of our 90+ suites," describes Henson. "These programs require a lot of meetings and a long refining process. We bought some equipment for cleaning the food receptacles. You have to clean those out daily. We've worked through those pains and now it's a pretty seamless process."

Since 2008 the Hawks have also been implementing green strategies to increase their energy savings. "We've been working on our power consumption for several years now," says Henson. "In 2008 we reduced our energy consumption enough to power 1,300 average American homes for a month."

The Hawks' system-wide approach to energy reduction focuses predominantly on commissioning, automated lighting, lighting upgrades and sensors, according to Henson. "Our energy savings are mainly attributable to building commissioning, with new checks and balances of our systems," he explains. "We had our airflow tested to ensure the systems were performing as designed and cut back use where possible. We looked at reducing lighting needs, have done some retrofits and also put some things on an automatic shut down. We put light sensors in offices. We were able to reduce the wattage of the fluorescent lamps from 34 watts to 25, with the same light effect throughout the facility."

Henson's team compared Philips Arena with similar venues nationwide to best evaluate their overall energy savings. "When we were moving through the LEED certification process, we were able to benchmark ourselves against other arenas," Henson explains. "We approached arenas that have a similar climate and events schedule. We tracked 21 percent better than any other building that we talked to in the country in terms of energy use. Additionally, our concert attendance is ranked third in the nation, which makes our energy savings metrics even more impressive."

**“WHEN WE WERE MOVING THROUGH THE LEED CERTIFICATION PROCESS, WE WERE ABLE TO BENCHMARK OURSELVES AGAINST OTHER ARENAS,”** Barry Henson explains. **“WE APPROACHED ARENAS THAT HAVE A SIMILAR CLIMATE AND EVENTS SCHEDULE. WE TRACKED 21 PERCENT BETTER THAN ANY OTHER BUILDING THAT WE TALKED TO IN THE COUNTRY IN TERMS OF ENERGY USE. ADDITIONALLY, OUR CONCERT ATTENDANCE IS RANKED THIRD IN THE NATION, WHICH MAKES OUR ENERGY SAVINGS METRICS EVEN MORE IMPRESSIVE.”**

On the other hand, the Hawks recognize that there is always room for improvement and meet regularly to plan their next projects. “We still have meetings to look at new products and procedures,” says Henson. “The thing about LEED is that once you get certified everybody calls you with new products which we evaluate based on payback and efficiency. We separate out the projects we want to entertain for future capital expenditure as well as the cost-neutral things that we can change now.”

In order to evaluate new products, the Hawks conduct internal research and also solicit advice from partners. “We’ll look through new products to determine if they’re legit. We talk to the typical user of a product to get their evaluation of it,” says Henson. “I also call Southface often and ask them if they’ve heard of the product or seen it in action anywhere, because they are a great resource for us. We get to the right people to make our decisions and count heavily on the partners who are closest to us in the process.”

Up next for the Hawks: a rainwater cistern and 100 percent chemical-free cleaning. “We are working on a couple of water-saving initiatives wherein we collect rainwater, as well as condensation, from our building and use that in our cooling towers instead of using city water. That’s one piece that we are actively working on, but it’s still in its infancy right now,” described Henson. “There are some alternate cleaning initiatives that are looking very enticing as well, which would keep us from using any chemicals whatsoever. We’ve found a company that makes a product that is both a sanitizer and cleaning agent. You can use it in any spray bottle or cleaning infrastructure that you already have and it eliminates the need for cleaning chemicals of any kind.”

## LESSONS FROM THE FIELD

**PARTNER WITH SPONSORS ON GREEN INITIATIVES:** The Hawks have harnessed the green initiatives of numerous local companies in order to enhance and grow existing corporate partnerships and fashion a large percentage of their own employee volunteer projects on community donation drives and reforestation projects.

**PARTNER WITH LOCAL ORGANIZATIONS TO GROW YOUR COMMUNITY CONNECTIONS:** “We’ve formed a tight relationship with Habitat for Humanity and with the Atlanta Mission. A lot of the things that we no longer use here are reusable so we try to donate to those two entities as much as possible because it helps take care of Atlanta locally,” says Henson. “It has been a benefit for us to get involved in nonprofit groups that are taking care of our local people, often also our fans.” The Hawks also participate in Rock and Wrap it Up!, a widely used food donation program. “The group comes and picks up the prepared leftover food; we only have to collect it and get it to a central location,” explains Henson. “We try to help as much as we can locally. Many of these issues, environmental and social, should carry over into peoples’ home lives. We try to help educate fans, friends and other family members.”

**PROVIDE DIRECT INCENTIVES TO ENGAGE STAFF IN GREEN ACTIONS:** “We are connected to a MARTA [Metropolitan Atlanta Rapid Transit Authority] rail station so we regularly encourage our workers to ride the train. We give them train and bus passes as a perk to encourage them not to drive,” explains Henson. “Access to mass transit is a big help as we were able to cut down on our amount of parking as part of our LEED certification.”

**REPEAT TRAININGS TO EDUCATE BOTH PERMANENT AND TRANSIENT STAFF:** “Our type of training programs are really about re-introducing the same idea over and over until our staff takes hold of it. Once they do then they start introducing it to other people,” says Henson. “We have so many third-party people working in our building at all times, which can make it difficult to educate everyone. But because the part-time employees are in constant contact with members of our staff, our messages get to those people as well.”



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## HOME DEPOT CENTER, HOME OF THE L.A. GALAXY

### First Outdoor Stadium to Be Awarded ISO 14001 Certification in North America

The Home Depot Center, home of the L.A. Galaxy pro soccer team, became the first outdoor stadium in North America to be awarded ISO 14001 certification for its environmental management system in November 2011.<sup>18</sup> "The ISO certification adds structure and transparency to our environmental stewardship commitments by putting all our ideas, programs and best practices on paper," said Katie Pandolfo, general manager of the Home Depot Center. "By having all of our goals and initiatives tracked in one place, the ISO keeps everyone on the same page and holds each of our divisions and employees accountable."<sup>17</sup> The Home Depot Center's energy-saving features include motion sensors connected to the HVAC and lighting systems so these systems are active in a given space only when that space is occupied.<sup>18</sup> To further enhance energy efficiency, the stadium also participates in Southern California Edison's Demand Response programs, which enable it to manage energy use to avoid statewide demand peaks. "One of the things we take pride in across our venues like the Home Depot Center is that sustainability isn't just a buzzword, but part of our smart business operations," said Jennifer Regan, global sustainability director at AEG, which owns the facility. "By cutting back our energy and water use, our participating venues not only reduce their environmental footprint, but also cut their operational costs, which has a direct impact on our bottom line."<sup>19</sup>

The L.A. Galaxy demonstrates its commitment to spreading environmental awareness in the greater Los Angeles community by participating in the Greener Goals Week campaign. As the MLS Cup Champion in 2011, the Galaxy participated in the Bonneville Environmental Foundation's Solar 4R Schools program, which installs solar panels on a school in the winning team's region. This year's 2.1-kilowatt solar array was awarded to KIPP Los Angeles College Preparatory School, located in East L.A. The panels are anticipated to produce 3,034 kilowatt-hours of clean energy per year. Solar 4R Schools also provides students and teachers with hands-on tools to help them learn about the importance of solar, wind and other renewable energy technologies. The kickoff event also included a garden planting project with Galaxy players helping to plant fruit, vegetables, and herbs in the school garden.<sup>20</sup>

## FENWAY PARK, HOME OF THE BOSTON RED SOX

### Oldest Major League Baseball Stadium Undergoes Facility-Wide Sustainability Upgrade

Built in 1911, Fenway Park is the oldest Major League Baseball stadium currently in use. Despite the venue's age, the Boston Red Sox have undertaken a variety of green initiatives to improve the operations and efficiency of their historic venue. "As stewards of such a storied venue, we recognize our unique position and ability to raise public consciousness about important issues. Our decision to enhance the ballpark's environmental attributes is one born out of a sense of personal responsibility and professional duty," said Tom Werner, the team's chairman, in 2008 during the launch of the Fenway Greening program, which was initiated in partnership with NRDC. "For us, this announcement marks some of the first steps in an ongoing process to make America's most beloved and oldest ballpark also one of America's greenest."<sup>21</sup>

In 2010, Fenway completed an energy audit to investigate ways to reduce energy use and save money. The park now uses LED lighting, which is 90 percent more efficient than the previous lighting. The ballpark also installed 28 solar panels across the roof of the Red Sox dugout. The array supplies 37 percent of the energy needed to heat Fenway's water, thereby avoiding the release of 18 tons of CO<sub>2</sub> each year, the equivalent of planting 4.86 acres of trees.<sup>22</sup> The stadium has also implemented many plumbing renovations, including the installation of waterless urinals, dual flushers, and water-efficient fixtures. Together, these have reduced overall water consumption by 30 percent, saving more than 360,000 gallons each year.<sup>23</sup> All building renovations use locally sourced materials, and new construction has reused more than 800 tons of old bricks and recycled other construction waste. Fenway also plans to install sensor-controlled fluorescent lighting.<sup>24</sup>

Fenway also has a Going Green recycling program, which involves a game-day green team of volunteers collecting recyclables and 100 solar-powered BigBelly compactors located around the park, each one able to hold 55 gallons of recyclables. Fenway uses 100 percent recycled content paper for most paper products, including *Red Sox Magazine*, in offices as well as the ballpark. Their concessionaire, ARAMARK, is committed to offering more local, organic food options and using cups, containers and napkins made from recycled content.<sup>25</sup> "With the help of our dedicated staff and valued sponsors, we are continuing our commitment to make Fenway Park friendlier to the environment," said Werner. "We hope that by incorporating both big and small changes in our daily operation, the cumulative effect will mean future generations can enjoy the great game of baseball in a cleaner and more environmentally friendly world."<sup>26</sup>



## TARGET CENTER, HOME OF THE MINNESOTA TIMBERWOLVES

### First Professional Sports Arena in North America to Install a Green Roof

In September 2009, the Minnesota Timberwolves installed the first green roof on any North American arena, spanning 2.5 acres (115,000 square feet) across the Target Center in Minneapolis.<sup>27</sup> Currently, this is the nation's fifth-largest green roof on any facility. The roof captures nearly 1 million gallons of stormwater a year, which saves \$10,000 annually in stormwater charges and prevents runoff into the Mississippi River. In addition, the green roof helps alleviate the urban heat island effect. The roof is planted with a variety of native Minnesotan prairie plants, including lupines, to support the endangered Karner blue butterfly.<sup>28</sup> "The city wanted to make a sustainable choice with this roof," said Tom Reller, senior director of operations for the Target Center.<sup>29</sup>

The Timberwolves have pursued other sustainability initiatives as well, including switching to using a plane for team travel that is 30 percent more energy-efficient than the type previously used; the plane also has an onboard recycling program.<sup>30</sup> The Timberwolves also partner with Juhl Wind, Inc., a wind power developer, to take part in Think Green month, which encourages fans to implement a more eco-friendly lifestyle.<sup>31</sup> At each home game during the month, the Timberwolves honor organizations or individuals helping to preserve the environment and air an in-game public service announcement that promotes the importance of greening. "We are very excited to be part of this interactive and informative program," said Corey Juhl, vice president of project development at Juhl Wind. "We enjoy working with the Timberwolves organization to spread the word and provide education to the community on how each of us can contribute to the preservation of our environment."<sup>32</sup>

## CONSOL ENERGY CENTER, HOME OF THE PITTSBURGH PENGUINS

### First National Hockey League Arena Awarded LEED Gold Certification in North America

The Pittsburgh Penguins' Consol Energy Center, built in 2010, was the first NHL arena to be awarded LEED Gold certification on August 4, 2010.<sup>33</sup> The project received high marks for water use reduction, recycled materials, regional materials, demolition and construction waste diversion, use of certified wood, and energy efficiency. LEED-qualifying features include increased green space around the outside of the building, locally procured construction materials, improved indoor air quality, efficient lighting and HVAC, maximized use of natural light, use of low-VOC paints and adhesives, purchase of renewable energy for a portion of energy use, and water-efficient plumbing fixtures. "The sustainable building practices that helped the center to achieve LEED Gold certification truly make this facility a world-class arena for Pittsburgh's world-class hockey fans and set a great example for future facilities of this type," said Edward G. Rendell, governor of Pennsylvania at the time.<sup>34</sup>

The Penguins are also committed to supporting the local community. The stadium's concessionaire, ARAMARK, has a menu that emphasizes locally grown ingredients. The Penguins participate in the Rock and Wrap It Up! program, donating unused concession food on game nights to local food banks. With 20,057 pounds of food donated in 2011, the Penguins ranked first among the 24 U.S.-based NHL teams participating in the program that year. "We thank our partners at ARAMARK for their commitment to this very important community program," said David Morehouse, CEO and president of the Penguins. "Food that otherwise would have gone to waste is now being turned into thousands of meals for the Greater Pittsburgh Community Food Bank to provide to those in need. We're proud to be a part of it."<sup>35</sup>

## CITIZENS BANK PARK, HOME OF THE PHILADELPHIA PHILLIES

### Greatest Purchaser of Green Power in U.S. Professional Sports

In 2008, the Phillies became the first Major League Baseball team to join the EPA's Green Power Partnership program, which encourages organizations to buy certified renewable energy. In June 2012 the Phillies purchased more than 22 million kilowatt-hours of Green-e certified renewable energy in renewable energy certificates (RECs) to offset 100 percent of Citizens Bank Park's electricity use with local clean energy. According to the EPA, this is the largest single purchase of renewable energy to date in professional sports.<sup>36</sup> The annual environmental benefit of this purchase is equivalent to planting 285,000 trees and growing them for a decade. By electing to purchase locally sourced wind- and solar-generated power, the Phillies are also investing in regional clean energy jobs.<sup>37</sup> "We're proud to join Major League Baseball in bringing awareness to fans about how to become more environmentally conscious," said Phillies president, David Montgomery.<sup>38</sup>

As part of their Red Goes Green campaign, the Phillies and Citizens Bank Park also have a strong recycling program. Throughout the ballpark are 40 oversize, 80-gallon recycling containers that accept cardboard, paper, e-waste, plastic, aluminum, and glass. A Red Goes Green Team, consisting of Phillies ball girls and volunteers, collect recyclables during games to boost the diversion rate. The venue has a recycling center for all departments, enhancing back-of-house recycling efforts. In a 2010 carpet replacement project, the Phillies recycled 1,755 pounds of carpet, which is equivalent to the waste generated by one American in a year. The Phillies also participate in the Rock and Wrap It Up! food donation program, giving unsold prepared food to local charities.

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## CHAPTER 4: RECOMMENDATIONS FOR IMPLEMENTING A SUCCESSFUL SPORTS GREENING PROGRAM

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This section contains a set of recommendations that can help teams and venues begin or build upon their environmental programs, based on lessons from some of the most well-developed sports greening initiatives in North America to date. By implementing some of this advice, sports teams and venues can gradually improve operations, strengthen their brand, attract green sponsors and engage with fans on this issue. The recommendations below are diverse, as greening strategies vary according to the needs and capabilities of individual organizations. Consider the following 10 strategies for beginning or improving a greening program:

### 1. RECOGNIZE THAT SHIFTING TO ENVIRONMENTALLY PREFERABLE PRODUCTS AND OPERATIONS TAKES TIME

The infrastructure that dominates the way goods and services are manufactured and supplied in the marketplace has been built up over many decades. In fact, that existing infrastructure, including environmentally harmful production practices, is often supported by subsidies, regulations and vendor relationships that make it more difficult to implement change. Some initiatives, such as energy efficiency audits and water use audits, can progress promptly. But other adjustments, such as actually changing energy-consuming technologies, measuring impacts, shifting to post-consumer recycled content paper products, developing a recycling-based waste management system and providing ecologically preferable food service, can take a few years to implement.

This should not deter you from undertaking the small steps needed to make gradual progress. Give your organization the time it needs to make these adjustments, and let the initiative unfold as slowly as needed to ensure that staff comfort, proper training and implementation, and budgetary restrictions will be respected. This will benefit the longevity and stability of the greening program. Moreover, long-range planning can allow an organization to invest in capital improvements that will save money over time.

### 2. START WITH EFFORTS THAT HAVE THE FASTEST RETURN ON INVESTMENT: ENERGY, WATER AND PAPER EFFICIENCY PROGRAMS

Starting with cost-saving environmental initiatives helps garner institutional support. Improved efficiency means less waste, which often translates into cost savings as well as savings of energy, water, and other resources. A sports greening program that begins with financially sound environmental initiatives—such as upgrading to more-efficient light bulbs, installing water-efficient fixtures or making double-sided copies and printing less frequently—will help the program gain momentum by cutting costs and attracting interest in other greening opportunities.

### 3. AUDIT YOUR ENERGY, WATER AND PAPER USE AND YOUR WASTE GENERATION TO SAVE MONEY

Commission an energy, water and waste audit to evaluate opportunities for resource and financial savings. (Many utilities provide free energy audits.) During an energy and water efficiency audit, a trained engineer conducts an analysis of your facility and identifies opportunities for enhanced efficiency that are likely to save your organization money and improve your environmental performance. Using the data collected, your organization can identify the feasibility of various infrastructure upgrades and improved building management systems and the potential for cost savings. Similarly, you can audit waste generation and paper use and identify opportunities to enhance efficiency in those areas.





#### 4. MEASURE YOUR ONGOING OPERATION— TRACK ENERGY, WATER, WASTE AND OTHER ENVIRONMENTAL COSTS

By tracking environmental data such as energy and water use, waste generation, and paper use, you will be able to assess performance and identify opportunities for improvement. Measuring also allows you to set short- and long-term goals and compare your performance with others in the field. Quantifying successes can help determine where your greening investments can make the most impact and can help your organization document progress, inspiring further investment by staff, partners, fans and sponsors. Some leagues are implementing league-wide tracking systems for environmental metrics like energy consumption, water use, waste/recycling, and paper purchasing. Take advantage of your league's measurement program if it's available. Even if your league doesn't yet offer an environmental tracking system, you can track your team's or facility's environmental metrics using tools like the EPA's Portfolio Manager and WasteWise, or even assemble individual spreadsheets with data supplied by vendors and service providers.

#### 5. ESTABLISH A GREEN TEAM LEADER, RECRUIT INTERESTED STAFF FROM ALL DEPARTMENTS, AND GET EARLY BUY-IN FROM LEADERSHIP

Often a greening initiative is launched by a single person who is motivated to implement change, but a successful greening initiative is one that embeds itself in the culture of an organization. A greening initiative must be bigger than a single person, who may at some point leave the organization. Make sure the greening initiative is supported by upper management to promote organization-wide buy-in. One way to involve staff at different levels is to create an organization-wide environmental mission statement. Also develop environmentally preferable purchasing policies and vendor contracts, and other tools supporting your environmental goals.

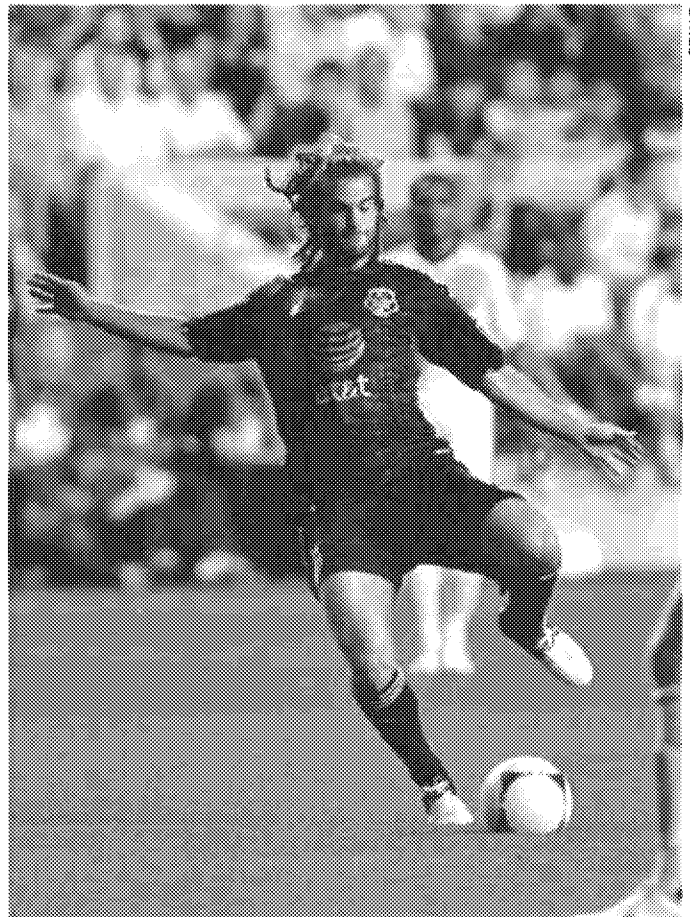
**6. REALIZE THAT GREENING IS A JOURNEY, NOT A DESTINATION. THERE IS NO GREEN, ONLY GREENER; AND THERE IS NO BEST, ONLY BETTER, AS NEW PRODUCTS ARE ENTERING THE MARKET ALL THE TIME**

Greening means reviewing your operations and procurement with an eye toward reducing environmental impacts. It is an iterative, ongoing process. Greening means not just following a checklist, but integrating environmental criteria into ongoing decision-making about products, services and operations. Make a formal environmental commitment where possible in purchasing policies, vendor contracts and sustainability reporting.

Greening is never really finished, because more efficient, environmentally preferable products and services are entering the market all the time. If you aren't able to find the product or service that meets your environmental needs at a given point, keep looking, and continue to let your vendors know what you want; chances are that the product will be available (and affordable) before long. Education of staff, fans, vendors and partners is also an ongoing process. By visualizing greening as a journey, you can celebrate accomplishments along the way and create a flexible initiative that can respond to changes in internal priorities and in the marketplace.

**7. SPONSORS AND VENDORS CAN HELP SUPPORT YOUR GREENING PROGRAM. IDENTIFY WAYS TO WORK WITH PARTNERS TO PROFIT FROM THIS SUPPORT**

Greening may lead to sponsorship opportunities with existing or new partners who share your goals of environmental stewardship. Involving sponsors and vendors can provide financial and organizational support to your environmental efforts. These partners may bring funding, advertisements and products to your greening effort. Also talk with your sponsors about funding solar arrays, recycling containers or other environmental enhancements to your facility. Collaboration with sponsors and vendors can also help disseminate information about your greening program into your host community. The community's involvement can also help move the marketplace toward more sustainable behavior. Involving your sponsors and vendors sends a valuable signal to the corporate world that environmental issues are important to your organization.



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**8. GREENING IS A GOOD BRANDING TOOL THAT CAN HELP RAISE YOUR ENVIRONMENTAL PROFILE IN THE COMMUNITY. ENGAGE FANS IN YOUR GREENING PROGRAM AND COMMUNICATE YOUR SUCCESSES**

Greening initiatives can provide opportunities for fans to interact with teams in their community. Fan engagement can be as basic as incorporating visible and well-marked recycling bins at a stadium, inviting community participation in green events, or featuring ongoing displays at a sports facility. Public service announcements or other broadcast initiatives can also yield great fan response. Some teams and leagues are modifying their websites and using social media to bring fans into their greening initiatives. Some communities coordinate sports greening initiatives with community goals and information sharing.



### 9. AVOID GREENWASHING, BECAUSE OVERSTATING ACCOMPLISHMENTS CAN BACKFIRE

Don't be shy about communicating success stories, but don't greenwash, either. Exaggerating your environmental achievements can undermine your good work and do long-term damage to your brand. There is no shame in announcing a small accomplishment. Indeed, there is no single business undertaking that can solve our many ecological problems. However small our day-to-day actions may seem, our collective purchases add up to meaningful regional and global impacts. Most individuals and businesses can do only relatively small things, whether it's buying products made with recycled content, using renewable energy, driving a fuel-efficient car, or conserving water. What is clear, however, is that everyone has to do something, regardless of how small it might seem, to reduce their ecological footprint.

### 10. LEARN FROM OTHERS. JOIN THE GREEN SPORTS ALLIANCE AND USE LEAGUE-BASED RESOURCES

Leagues can offer support by sharing information about better practices that other teams and venues have already implemented. MLB, the NHL and the NBA have, or will soon have, environmental data-gathering systems that can help measure progress and identify opportunities to improve. Green Sports Alliance newsletters, conferences and greening committees are other ways to obtain information about greening.

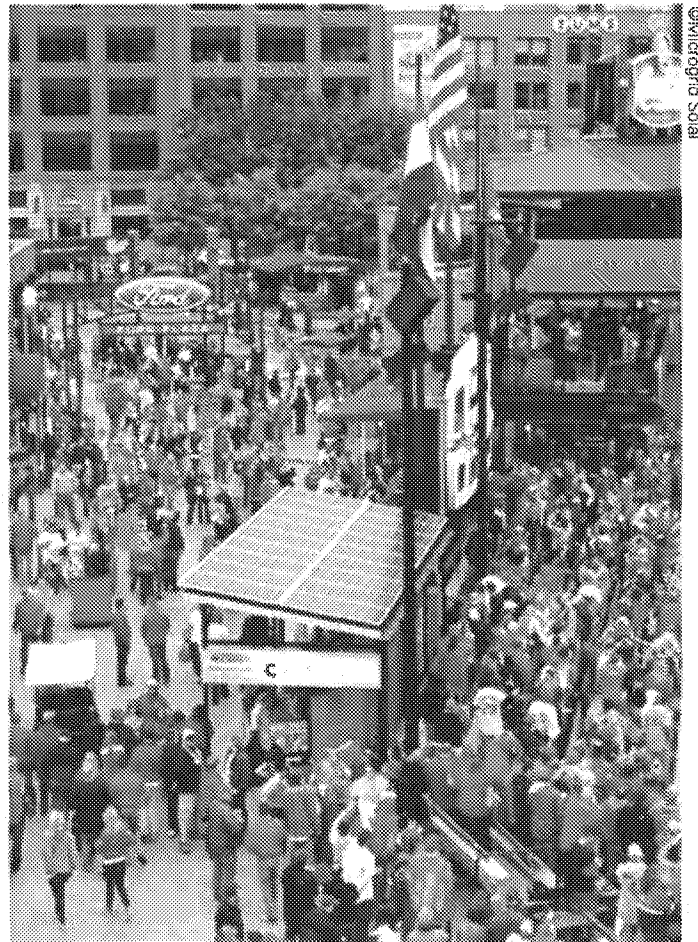
To get started today on greening your team, venue or event, consult the NRDC Greening Advisor at [www.greensports.org](http://www.greensports.org) for in-depth suggestions on how to adopt greener practices. The Greening Advisor is a free, online guide that helps sports leagues, teams and venues implement environmentally intelligent practices to improve the efficiency of operations, uncover opportunities to cut costs, enhance brands and benefit public health. It covers everything from energy audits and arena transportation to purchasing, travel and waste management.

## AFTERWORD

Looking back over the past few years at the environmental progress in the professional sports industry and society in general, we can see remarkable progress being made, sometimes smoothly, sometimes in fits and starts. Bright lights of innovation are leading the way forward. The best-in-class examples documented in this report reveal solutions to some of the most pressing environmental challenges we face. We can learn from the innovators described in this report that are working to make their teams, their venues and their leagues more environmentally responsible. With simple operational changes and minimal investments, we can make major strides to reduce the collective footprint of the globally influential sports industry and its supply chain. However, it's clear that even with our best efforts, we still have a long way to go.

The replication and scalability of these greening initiatives is an important part of the work that will move us forward. Replicating successful strategies brings the lessons of the few closer to being business as usual. Once someone has blazed a trail, it becomes easier for all of those who follow. That's one reason to be thankful for the innovative teams featured in this report who have gone out on a limb to seek ways to solve problems before they were fully aware of the solutions. Along the way, technology and market-readiness also improves, often enabling the price of environmentally-preferred products to come down. Consider the growing success of LED lighting over the past few years, making lighting retrofits more practical and the return on investment even stronger. But given the pace of technological and operational improvements, we need to do more than simply repeat the old models. Replicating the past, even the best-in-class examples outlined in this report, will not, by itself, get us to a sustainable future. We need to create new strategies and new tools along the way.

We might consider a sustainability path for our organizations in three stages. First, recognize our responsibility to improve the way we do business, enhancing the performance of our operations and also reducing our environmental impact. Second, accept that significant effort and investment of time and resources will be necessary to actually do the work and to make progress. Third, develop a clearly defined plan and create accountability for implementation within the organization. With a smart plan in place and a strong team to execute it, environmental initiatives can become part of the regular fabric of operations. Finally, by building in measurement and periodic reviews of



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the plan, progress and goals, the team can make adjustments, add or reallocate resources when necessary, and help to embed the strategies into the culture of the organization, ensuring success year after year.

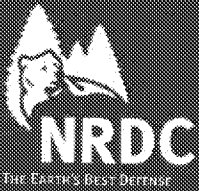
Once we have these internal strategies in place, we can connect with and learn from each other, from other venues, other leagues, and other industries, a role that the Green Sports Alliance was envisioned to fill. By learning what's working, sharing what's not, and encouraging collaboration and innovation across the leagues, the Alliance has grown from an inspiring collection of six teams and venues, and founding environmental partners, to include over 50 professional and collegiate teams, representing over 13 professional leagues and over 100 sports facilities. This unprecedented international network continues to grow and allows for the rapid transmission of information from one successful project to an operator just beginning to build a plan. This type of collaboration across silos, across leagues and across geography is both necessary and inspirational. It reminds us that while competition is fierce on the court or the playing field, when it comes to environmental initiatives, we all win when we share our successes.

Sports venues are not alone when trying to address environmental initiatives; in fact, a growing number of companies are discovering how important it is to understand the environmental footprint of their business, and find new ways to reduce costs and reduce impacts. As we look forward to the years ahead, there is an opportunity to learn from the sustainability pioneers in the field, and find new ways to apply their innovations in sports venues and help others along the way. We need those leaders to share what they have learned and build bridges to support those just getting started.

To all the sports organizations out there: Get in the game, keep score, and get recognized for the good work you do. The journey toward more sustainable operations is ongoing, but there are plenty of people and organizations who want to help you succeed, if you just ask. It's really pretty simple. Improve your operations, reduce your environmental impact, and reduce your costs. That's just good business.

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Executive Director  
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[www.NRDC.org/sports](http://www.NRDC.org/sports)

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**Game Changer: How the Sports Industry Is Saving the Environment**

September 2012 **NRDC**

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