Public Expectations Will Help CA Law Enforcement Build Green Structures.

by

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The Command College Futures Study Project is a FUTURES study of a particular emerging issue of relevance to law enforcement. Its purpose is NOT to predict the future; rather, to project a variety of possible scenarios useful for strategic planning in anticipation of the emerging landscape facing policing organizations.

This journal article was created using the futures forecasting process of Command College and its outcomes. Defining the future differs from analyzing the past, because it has not yet happened. In this article, methodologies have been used to discern useful alternatives to enhance the success of planners and leaders in their response to a range of possible future environments.

Managing the future means influencing it—creating, constraining and adapting to emerging trends and events in a way that optimizes the opportunities and minimizes the threats of relevance to the profession.

The views and conclusions expressed in the Command College Futures Project and journal article are those of the author, and are not necessarily those of the CA Commission on Peace Officer Standards and Training (POST).

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Introduction

How will California law enforcement agencies expand their existing structures or build new ones during the next decade? How can they balance the cost of such structures, the demand for efficiency in size and function, and also cope with emerging sentiments to build public facilities in a way that is consistent with the best outcomes for the environment? On the pages that follow, we will look at the increasing need for new office space, public concerns and legislation about the manner in which those facilities are built, and how we might "go green" to lead our communities in police buildings of the future.

The Issue

Many California agencies will find themselves providing law enforcement services to increasing populations because of the projected population growth of almost one-half million people per year in the State (US, 2009). Growth alone will dictate that some agencies will have to expand or build new structures. So, what kind of structures will they build? The choice is simple: continue to build conventionally (standard) or to embrace sustainability (green).

Conventional buildings use significantly more electricity, water, and raw materials in their design and they emit much higher levels of greenhouse gasses, which make them a target for public disapproval. Green buildings are almost the opposite in all these categories. In the United States alone, "conventional buildings account for 70 percent of electrical consumption, 39 percent of energy use, 39 percent of all carbon dioxide emissions, 40 percent of raw materials use, 30 percent of waste output, and 12 percent of potable water consumption" (US, 2008). California has more than 37 million residents (US, 2008), which represent less than .005 percent

of the world's population but as a much smaller (as a percentage) group, "produced roughly 1.4 percent of the world's greenhouse gasses" (CA.Gov, 2008). Should this concern the police and their future building plans? It should because California political leadership, who help formulate public opinion and fund agencies building efforts, continues to address green issues. In March 2009 while attending the "Green California Summit" held in Folsom CA, California governor Arnold Schwarzenegger said that "California is at the forefront of green technology and public policy, applauding those who work in this vital area". He further said that "companies and people who work in the green technology area are preserving our resources, protecting the environment and making a difference to our communities, the state and around the world" (Gray, 2009). This sentiment has propelled a number of legislative efforts to enforce that ideology.

Cities and counties across America are passing laws that dictate green compliance with building design. Currently, legislation, executive orders, resolutions, ordinances, policies, and incentives are found in 44 states, including 193 localities (128 cities, 32 counties, and 33 towns). This includes 31 state governments, 12 federal agencies, 16 public school jurisdictions and 39 institutions of higher education (USGBC, 2008). Many states, cities, and counties are following this trend as they examine how they will frame their future building code compliance.

One step in any project, including planning for building a new structure, is to identify local, state, and federal laws as they relate to the project. Law enforcement must closely examine any laws regarding building construction before moving ahead with any project. Failure to identify them will cost the CLEA time, energy, and public money. These laws generally mirror the public's overall desire is to be more energy efficient and ultimately, friendlier to the planet and they will insist that their tax dollars be spent on green buildings if spent at all. If law

enforcement agencies want to expand or build structures in the future, they will either incorporate smart building practices using green technology or simply put, they won't be built.

Public Concern

California law enforcement agencies must always engage in some type of public process when they plan for expansion or building new structures. The general public is knowledgeable and appears supportive of environmentally friendly projects. More than a decade ago, a 1996 Newsweek poll in reference to the (then) Presidential election showed that Americans were for the most part, environmentalists. This poll identified that 75 percent of Americans considered the environment a high priority. "84 percent of American voters considered environmental issues to be important in the Presidential election and Colorado State University pollsters found that 96 percent of voters considered candidates' commitment to national parks when voting. Another 84 percent of Americans considered themselves to be environmentalists or sympathetic to environmentalists" (Baden, 2007).

Today's ongoing political and public debate(s) on global warming include the possible causes of global warming, the effects it may have on the planet, and what can be done to help mitigate the results. These debates continue to keep the public aware of the issue on almost a daily basis. In an April 2006 speech, (then Senator) Barack Obama discussed climate change. He said that "Not only is it (climate change) real, it's here, and its effects are giving rise to a frighteningly new global phenomenon: the man-made natural disaster" (Notable, 2009). Obama recognized that man-made, conventionally built, structures are one of the "largest negative contributors to global warming and the environment" (WBDG 2008). The public and political concerns specifically address the design, construction of and life-time maintenance of buildings, all in an effort to go green. With the myths and misperceptions about the "green" movement,

though, it is important to clearly note what we are talking about when referring to green structures.

Green Defined

The term green building (or sustainable), when applied to renovation or construction, generally refers to "lessening the environmental impact and improving the efficiency and long-term economic performances of both new construction and renovation projects. Green buildings are also frequently referred to as "high-performance buildings" (USGBC, 2008). While most green buildings look similar to conventionally constructed buildings, their operational costs are often lower because of the integration of high-quality energy-efficient materials and products. "Benefits of green buildings also include better indoor air quality and increased occupant comfort and productivity" (NYC.Gov, 2008).

So, What Do We Do?

Given that public opinion and legislative action are strongly encouraging or even mandating significant changes to the construction of future police facilities, what do we do? Fortunately, there are emerging standards and recommendations for us to consider.

The U.S. Green Building Council identifies six major components as being important in their "Leadership in Energy and Environmental Design" (LEED) program. "LEED is a third-party certification program and is the nationally accepted benchmark for the design, construction and operation of high performance green buildings" (US, 2008). The six components they list include:

1. Optimal building site: Law enforcement does not always have the ability to choose the site of new buildings but when able to do so, they should recognize that site selection has extreme importance to the overall impact the building will have on the environment for

decades to come. A buildings location, orientation, and landscaping affect the local ecosystems, transportation methods, and energy use. Physical security of the site and the building is very important. Access roads, parking, vehicle barriers, and perimeter lighting but be part of design (WBDG, 2008).

2. Optimizing energy use: The United States had a wake-up call in 2008. Fuel costs sky-rocketed, China and India's demand for fuel forced American's to pay fuel prices they had never seen before. Continued demand from these and other developing countries could cause this rise to continue. Law enforcement buildings should be built to be energy efficient and utilize renewable energy wherever possible.
3. Protect and conserve water: Californian's current water use is of concern. With a population that continues to grow, Californian's may continue to face water shortages in the future. Sustainable law enforcement building design will reduce, control, and treat water run-off. Re-using or recycling water will be of extreme benefit in the future.
4. Use environmentally preferable products: Sustainable buildings utilize materials that do not harm the environment. This can include building with recycled and recyclable material. This helps combat global warming, resource depletion, and limits materials that contribute to human toxicity.
5. Enhance the indoor environmental quality: Sustainable buildings use natural lighting, have appropriate natural ventilation and moisture control, and provide filtration which limits or mitigates chemical, biological, and radiological attack.
6. Optimize the operational and maintenance practices for decades of use: The operation and maintenance of a building for many years to come must be planned. The initial design must specify materials and systems that simplify and reduce maintenance

requirements and costs. The design should be able to incorporate new technology as it becomes viable (WBDG, 2008).

Future efforts to design CLEA buildings must also include provisions for construction that will follow smart building practices like those listed above including selection of a site that minimally affects the environment. The building must conserve energy and water, limits its negative effects on the environment through appropriate selection of materials, enhances the indoor living quality for those who use the building conserving resources, and serves the agency and the public for decades with minimal impact on both the environment and the public funds. The majority of the public will endorse these practices as they believe in the concept of building environmentally friendly structures. This public sentiment has support at both the State and Federal levels. The final question to be answered is what is the cost of a green building compared to a conventional one?

Cost

The cost of smart building design and construction is not prohibitive. In October 2003, "The Costs and Financial Benefits of Green Buildings", a report developed for the Sustainable Building Task Force which is a group of more than 40 California state government offices, identified that total financial benefits of green buildings are over ten times the average initial investment required to design and construct a green building. Energy savings alone exceed the average increased cost associated with building green. The report added; "the relatively large impact of productivity and health gains reflects the fact that the direct and indirect cost of employees is far larger than the cost of construction or energy. Consequently, even small changes in productivity and health translate into large financial benefits" (Kats, 2008).

Executive Order S-20-04, issued by California governor Arnold Schwarzenegger in December 2004, mandated that "certain types of buildings must incorporate green standards" (Gray, 2009). The order also identified the cost savings requirements for the construction and operation of green buildings in its Energy Action Plan. This Energy Action Plan covered topics including identification that "the electricity costs for California's commercial and institutional buildings exceeded $12 billion per year, and cost-effective efficiency practices outlined in this order could save more than $2 billion per year" (Gov.CA, 2004). This equates to a 16 percent savings. Furthermore, the report stated the State of California's own buildings consumed over $500 million of electricity per year and the green building measures outlined in the plan would save California taxpayers $100 million per year, or approximately 20 percent.

It may be monetarily more difficult to build a green public building today than in the recent past due to the poor economic situation and lack of revenue streams as green designs do cost more in upfront costs to build than conventional ones. This premise only holds true if one is looking at budgets and expenditures on a year-to-year basis. "Up to eighty percent of any buildings construction price is set in unchangeable costs (land purchase, raw materials, and labor)" (WBDG, 2008). The other twenty percent of a buildings' cost is variable. In most cases, the additional cost of building green could be recouped through energy savings in a few years or even less. The building can literally save money through efficiency. The adding of green technology to this variable twenty percent can pay huge dividends over the lifetime of the building. While energy costs cannot be reliably forecast, "green buildings can cost 16 to 20 percent less to operate and will generate savings" (Kats, 2003). The "Joe Serna Jr." building in Sacramento CA illustrates how an initial investment to build green can be recouped quickly through energy savings.

The Joe Serna Jr. Building

An example of green savings in building design can be found in the "Joe Serna Jr." California EPA (Cal/EPA) Headquarters Building located in Sacramento, California. This building received upgrades including modern green refinements and expansion in 2004. As described in the California EPA website, "an investment of $500,000 in efficiency upgrades generated $610,000 in annual savings, paying for the initial investment in less than one year. Using an 8% capitalization rate, the annual cost savings increased the asset value of the building by nearly $12 million. After the improvements, the building showed itself to be 34 percent more energy efficient" (USGBC, 2009). CLEA can use figures like these in identifying to the public and government agencies that building green is the way to go.

Joe Serna Headquarters Building
Owner: City of Sacramento (leased to the State of California Environmental Protection Agency Developer/Management Company: Thomas Properties Group, LLC
Photography courtesy of John Swain Photography (U.S. 2008)

Conclusion

The public's opinion over the last few decades has changed and this helped change local, state, and federal law, which now place demands on the public sector to build environmentally

friendly structures. The public now accepts many concepts associated with the green movement and environmentalism in general. The public has also learned how our current conventional structures negatively affect the environment. The words “carbon footprint”, which basically measures our impact on the environment, was hardly recognized a decade ago and is now a common phrase, which has meaning in regards to how a person or object is affecting their surroundings. The public now wants environmentally friendly buildings. They want buildings to have a minimal carbon footprint. They will support their tax dollars being spent on projects that reinforce their beliefs. The time for law enforcement agencies to incorporate green technology into their building design is here right now. Doing their part to help the environment, making the world a cleaner place to live, using less valuable resources, and conserving energy is something all can stand solidly behind. The police should be a part of this commitment. Utilizing green technology in law enforcement building design is the right thing to do.

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