The Police Station of the Future...
Or Today?

By

Danny L. Fish
Captain
Petaluma Police Department

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This Command College Independent Study Project is a FUTURES study of a particular emerging issue in law enforcement. Its purpose is NOT to predict the future, but rather to project a number of possible scenarios for strategic planning consideration.

Defining the future differs from analyzing the past because the future has not yet happened. In this project, useful alternatives have been formulated systematically so that the planner can respond to a range of possible future environments.

Managing the future means influencing the future--creating it, constraining it, adapting to it. A futures study points the way.

The views and conclusions expressed in the Command College project are those of the author and are not necessarily those of the Commission on Peace Officer Standards and Training (POST).
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**Introduction**

There are over 19,000 state and local police agencies in the United States. Most have, or will in the future, need to plan, design and build or remodel a headquarters, precinct or substation. Since the useful life of a police facility can range from 20 to 50 years, a new facility project is usually a novel experience for most law enforcement executives. Effective planning for a new or renovated police facility is the most cost effective step an agency can take to ensure a successful project. The problems begin when police facilities continue to operate well past the planned life span. They often become seriously overcrowded, suffer from lack of sufficient infrastructure (HVAC, electrical, data, telecommunications) and make due with outdated security and safety systems. These conditions often impair staff efficiency and morale, employee safety, policing effectiveness and public perception of the department.¹ Those overdue for new space are often tempted to think in terms of the past when planning for the future. Rather than replicating what might already exist, the goal should be to construct the building of the future.

**Not If, But When**

Since the issue in question is not if, but when a facility will require a remodel or rebuild, it is only natural to begin asking what the police facility of the future might look like. Impacts on building a new police facility include costs, land space and potential

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¹ IACP Police Facility Planning Guidelines; A Desk Reference for Law Enforcement Executives (1998)
locations. There are also issues of capitalizing on building technologies that will upgrade facilities to meet the needs of changing police organizations. Government budgets are not growing at a rate that will likely allow for huge expansions, which means alternate funding solutions will be required. Building trends, real estate costs and community growth are making it more and more difficult to find adequate parcels of land to build new police facilities. The future of technology, building materials and mobile based policing will allow police facilities to operate in a very different manner that what we have considered normal for many years.

As an example, the small town of Cloverdale in northern Sonoma County recently consulted with a building firm to establish needs for a new police facility. This move came as a result of another consultant’s report that said the current public safety facility was “wholly inadequate” and did not meet current earthquake safety standards. The report recommended a new $11 million dollar building. The question of how, when and where the city will find the money, however, remains an open question. Twice in recent years, a special ballot measure to finance a new headquarters has failed to obtain the two-thirds voter approval required.\(^2\) The problems faced by the City of Cloverdale are not isolated. Similar voter approved bonds and referendums have been unsuccessful in other jurisdictions all over the nation, including the neighboring City of Sausalito in Marin County.\(^3\)

This becomes an important issue because all jurisdictions will continue to have a need for policing functions. No matter what the future brings, police facilities in some

\(^2\) The Press Democrat, Wednesday July 5, 2006, Empire Section page B1

\(^3\) Ibid
shape or fashion will be a part of the community’s infrastructure. The amenities it will contain for the employees and what technologies will be implemented to streamline their tasks are of great importance. Beyond function, one must consider security for the facility and traffic flow in and out of the building. The police station of the future becomes important over time because many organizations are relocating or remodeling every year and new facilities are constantly being built to allow for growth of staff and services. A fresh way of looking at the building needs and processes may pave the way for something never done before.

The common practice at present is that police facilities will continue to be built and designed as they have been over the past 30 to 50 years. They should not be. On the pages that follow, you will see a glimpse of what the police facility of the future may look like; its design, technology and services provided to the community and employees. The reader can then take these concepts to their own setting as a template for planning when they are faced with decisions on how to provide for the public and the police employee when creating new facilities in the future.

**Historical Perspective**

The history on the topic of police facilities is relatively constant. For many years, leaders and planners have talked about what police facilities might look like in a future 10 to 20 years down the road. Unfortunately, predictions made by many who worked in the field over the years have been incorrect. For more than twenty years, researchers have predicted major changes to the law enforcement facility in the way of service delivery systems, technology, space requirements and employee conveniences. For
instance, in 1997, David L. Carlisle researched a similar aspect of the police facility and predicted that “More contemporary police buildings in the future will have features that are indicative of an evolution in police facility design and function. Telecommuting employees, teleconferencing rooms, space for children and public/private partnerships such as banking devices in the station house are all indications of a trend toward a future facility that may look and function far differently than now. The amazing level of technological progress may make the facility of today totally obsolete in a few short years.”

The first of the standardized guidelines to design and build police facilities included work completed in 1973 by the National Clearinghouse for Criminal Justice Planning and Architecture (Department of Architecture, at the University of Illinois) under a contract to the Law Enforcement Assistance Administration of the United States Department of Justice. During that period of time, the National Clearinghouse filled the void of information concerning police facilities. The document stated: “Many law enforcement official and architects who have designed a facility for the first time have been greatly frustrated because of the lack of printed information that would assist with facility design”

In the early 1990’s, the International Association of Chief's of Police was still utilizing this guide in their training program, “Planning, Design and Construction of

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4 Carlisle, David L., from an article entitled “What Forces Will Shape the Function of the Police Facility by the Year 2006.” POST Command College Class 23, 1997

Police Facilities.” That document presented concepts concerning police programs, facility planning, police program components, facility components and budgeting/costs that were already almost twenty years old. The planning, budgeting and funding concepts are fundamentally feasible. However, the design ideas and needs assessment need to be updated. An increased focus on state of the art technology should be incorporated to educate the uninformed on the possibilities that are available in terms of construction materials, methods and infrastructure.

We are not currently building police facilities as predicted and the buildings of today are far from obsolete. In fact, we have embraced the past and continue to build police facilities under the same guidelines that we did almost 35 years ago.

The Present

Today, the common document used by law enforcement leaders to plan and design police facilities is the *International Association of Chief’s of Police (IACP) Police Facility Planning Guidelines (1998).* These guidelines follow the National Clearinghouse guidelines as the “updated” and “futuristic” version of police facility planning. While the guidelines became more elaborate and explanatory than, the overall focus did not change. The addition of Community Oriented Policing issues was the primary change, along with making the document user friendly with a “how to”

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approach. The guidelines are broken into categories of Project Initiation, Planning/Pre-Design, Budgeting/Funding and Design/Delivery.

Current law enforcement leaders are still clinging to the old ways of building facilities and much of the reason is driven by space and cost concerns. Most agencies only rebuild because they have been forced to, based on space constraints or significant growth. They have outgrown their current facility and are forced to look elsewhere or add additional space, usually the result of poor growth planning. In other cases, a police department is forced to move or rebuild simply because the original structure and equipment begins to wear out. In 1995, Steve Polson wrote, “Your building is the one piece of equipment that all personnel use. When it fails, the work does not get done or it doesn’t get done very well.”

Considering most police facilities operate day and night without breaks, it is reasonable to conclude they may wear out before their useful lifetime average of approx. 25 years.

Current focuses on police facilities involve employee comfort and convenience and service delivery systems to the public. This focus has been supported by past research that indicates the police facility is perhaps the most important and essential resource in the law enforcement profession. It reflects the dignity of the law enforcement and public’s philosophy toward the accomplishment of police service goals. Further research went as far as to conclude that the working environment is of significant

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11 Ibid.
importance. There has been substantial documentation to suggest that poor working conditions can contribute to and reinforce negative behavioral tendencies. The research fell short of suggesting that outdated facilities could influence an officer to the point of actual misconduct.\textsuperscript{12}

Today’s police facilities are the future facilities of the past. Considerations then, which are still the focus today, include:

- office space for employees,
- prisoner housing,
- secure storage of evidence,
- space for sophisticated communications equipment,
- weapons storage,
- locker room and changing facilities,
- secure parking and buildings strong enough to withstand natural disasters.

More advanced thoughts of the past that are only occasionally considered today. These include telecommuting employees, teleconferencing rooms, space for childcare and public/private partnerships like community rooms or bank ATM machines. These trends were indicators of a future facility that was supposed to function far differently than it does today. The prediction of the past was that “amazing levels of technological progress may make the facility of the future (today) totally obsolete in a few short years”\textsuperscript{13}

\textsuperscript{12} Miers, George, “Designing Community-Oriented Police Facilities”, \textit{Western City}, May 1991, page 16.

Other predictions that were slated to occur by today included a decentralized approach to law enforcement services caused by the community-oriented policing approach popular in the late 80’s and early 90’s. That concept included satellite stations located where calls for police service were highest. Concerns over negative economic conditions like major recessions led way to forecasting mergers and regionalization of police services. Threats of natural disasters such as earthquakes or hurricanes lead to discussions of building police facilities that double as shelters for the public.14

These ideas of the past, while valid concerns of the time, have not revealed themselves as fact. To the contrary, law enforcement leaders have resisted many of the ideas and have refused to accept any philosophy that changes anything about the traditional police building. In fact, in a recent article highlighting brand new police buildings all over the country, the traditional police facility remains intact.15 In that article, an analysis of police station construction projects in progress around the nation highlighted some limited progress in innovation, but fundamentally traditional ideas about police station locations and facilities. Police facilities being built today still include the standard concerns of space, they are individual stand alone buildings with limited public access, they incorporate technology that is not all that different than the buildings of yesterday and they are being built with the traditional police services in mind. More interestingly, they are being built using the IACP Police Facility Guidelines developed almost 10 years ago.16

14 Ibid
A 2005 article appearing in Police Chief Magazine informed readers how best to use the IACP Police Facility Guidelines to plan and design new police buildings. In that article, the author emphasized the need to plan for appropriate space needs and for the costs and funding issues associated with a new building in today’s economy. The article highlighted new police buildings from around the country completed in 2005. Interestingly, the new buildings were not that different from the buildings of yesterday. Admittedly, they are being built with new materials and new techniques, but the overall design still reflects the traditional police facility with traditional services being the main consideration.

The Future

The clear cut trends in the construction of future police facilities are in the area of building security systems, reinforcing structures (Target Hardening) and using “green” architecture to satisfy environmental concerns of the future. The post 9/11 world should dramatically change the way we look at the security and strength of police facilities and other government buildings. The ability of our facilities to deter unauthorized access and to withstand major attacks has become increasingly important to ensure the survivability of law enforcement during and after an unanticipated attack or event.

Building Security Systems

The first line of defense in the future trend toward better safety and security at our police facilities is in the field of biometrics. Biometrics is defined as “the study of automated methods for uniquely recognizing humans based upon one or more intrinsic

physical or behavioral traits”¹⁸ In information technology, biometric authentications refer to technologies that measure and analyze human physical and behavioral characteristics for authentication purposes. Examples of physical characteristics include fingerprints, eye retinas and irises, facial patterns and hand measurements, while examples of mostly behavioral characteristics include signature, gait and typing patterns. Voice is considered a mix of both physical and behavioral characteristics.

The “who you are” is what underlies all biometric-based systems, as opposed to “what you have” such as electronic key cards, or “what you know” such as a personal identification number. Your biometric is part of you and cannot be lost or forgotten, stolen or easily forged. This fact is the reason biometrics will become the standard for security access to law enforcement facilities in the future. Key cards and access codes will become a thing of the past as the biometric technology becomes more affordable and less prone to difficult installations.

For instance, recent orders by the Blackstone Police Department in Massachusetts and the Cheektowaga Police Department in New York are examples of law enforcement agencies making the jump to biometric fingerprint security access programs in an effort to make their buildings safer and more difficult to breach.¹⁹ There are other similar examples popping up all over the country by law enforcement agencies upgrading security during remodels and new construction and it does not end with just fingerprint biometrics.

Technologies that use fingerprints and fingerprint minutiae (data points on a print rather than an actual image) seem to be the most prevalent in security and access control systems to date. Biometric companies, though, are also offering technologies that assess, measure and match a person’s face, ear, hand, iris, retina and voice patterns, blood vessel patterns, skin texture and even DNA. Biometric firms are currently working to advance the science and develop more sophisticated technologies, such as “intelligent” facial recognitions that recognize a person’s face as it ages over time and next-generation fingerprint readers that use radio-frequency energy or multiple wavelengths of light to enhance the capture of fingerprints. For instance, technology developed by Animetics Inc. (www.animetrics.com) can create complete three dimensional facial images from two dimensional pictures and video images. This technology can significantly enhance the capability of video surveillance and access control systems.  

Another newcomer to the biometric world of access control is vascular scanning technology, which reads blood vessels in targeted body parts. The Vascular VP-II made by Indentica Corp. (www.identicacorp.com) uses infrared light to capture the patterns of veins and capillaries on the back of the hand. If the information captured in the live scan matches the data recorded on the individual’s access card or in the system’s database, the individual is permitted access. The new system provides a higher level of security than the more traditional fingerprint technology.

Another option in the biometric world of security access control which relies on “under the skin” technology is the multi-spectral imaging system which uses multiple wavelengths of light to read a person’s unique anatomical characteristics such as skin

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layer thickness or the patterns of light dispersed in collagen density. Matthew Ennis, Director of Business Development for Lumidigm Inc. (www.lumidigm.com) says their new system uses different colors of light to examine the surface and sub surface of an individual’s finger. Ennis says that the system is superior to more conventional fingerprint readers because it does not depend on making contact with the fingerprint ridges. More traditional fingerprint readers require physical contact between the sensor and the print which can become obscured by wear, sweat or too rapid of a swipe across the reader.21

Until recently, cost was the greatest obstacle between public agencies obtaining this technology and settling on something inferior. Some of these systems have been offered for as little as fifty dollars per employee and can top out in the area of tens of thousands. The trick is learning about and knowing what your needs are and having a procurement strategy that makes sense. According to Tom Lockwood, Director of Department of Homeland Security’s National Capital Region Coordinator, access control technologies, including biometric based systems, are allowable expenditures under DHS State Homeland Security and Urban Area Security Initiative grant programs.22

**Target Hardening**

The next area open for discussion is related to the aggressive approach being taken to protect the actual structures of law enforcement and other public buildings from terrorist attacks or great natural disasters such as earthquakes and hurricanes. Target

21 Ibid

Hardening concepts are not new. In the era of castles, security was obtained from rings of protection such as cleared fields, a moat, outer walls, inner walls and towers. Many of these methods are reflected in today’s automatic wedge barriers, bollards, anti-ram gates, glazed windows and blast-resistant columns. The most modern and aggressive being the wedge barriers which are angled steel plates capable of being raised hydraulically two or three feet from a road surface to block vehicles.

The concept of Target Hardening our law enforcement and other government buildings first began to take shape after the 1996 bombing of the Murrah Building in Oklahoma City. Since then, many branches of the government have become involved creating standards and making recommendations. Target Hardening actually begins with perimeter control as a multiple strategy approach to building survivability. Four primary strategies exist to protect against attack. They are deter, delay, detect and prevent. Hardening is a prevention strategy intended to mitigate consequences should the first three strategies fail, and is considered the last line of defense.\(^\text{23}\)

The Department of Homeland Security 2005 National Infrastructure Protection Plan calls for all levels of government to consider appropriate mitigation against potential hazards, whether natural, criminal, accidental or terror related. The Department of Defense and the General Services Administration, which is responsible for all non-military federal facilities, now require all new buildings be able to resist disproportionate collapse. Some are designed to actually resist street level car-bomb blasts.\(^\text{24}\)


\(^{24}\) Ibid
Wade Belcher, an architect in the General Services Administration’s Office of the Chief Architect, indicates that the primary areas of mitigation include reducing the potential for progressive collapse, protection against shattered glass and flying building materials and reducing the opportunity for airborne substances being introduced into ventilation systems. Belcher also believes that there is no one-size-fits-all solution and that actual mitigation techniques are building specific.\(^{25}\)

Material technologies combined with engineering advances in blast loading, related to Target Hardening, have resulted in new designs. Many new facilities at all levels of government now include glass that is strong enough to resist a blast load and also designed to not fly far even if it does shatter (In many cases, flying glass shards can be more lethal than the blast itself).

Skansa USA, a leading construction company, has seen a Target Hardening trend develop recently at state and federal courthouses, border patrol stations, FBI offices, police headquarters and banking communications complexes. Brian Murray, Skansa’s Vice President, reported that the federal courthouse in Jacksonville, Florida is an example of a project designed both as a hardened structure and resistant to progressive collapse. The building is raised from the ground level to provide additional protection. The lower five floors have a combination of concrete panels, continuously filled masonry and customized glass. Further details about the project were considered confidential.\(^{26}\)

For new buildings, concrete walls using insulated concrete forms and precast concrete sandwich panels are being blast tested by government agencies to determine


which type of walls give the best protection against blast. For existing facilities, fiber-reinforced polymers consisting of dry aramid or carbon fibers are applied with polymers on the surface of existing concrete columns, beams, slabs and walls in buildings to increase the structural performance of concrete. Many of these ideas were discussed after a study by the Department of Defense, in 2001, established guidelines for resisting progressive collapse.27

While many of these Target Hardening trends are being incorporated in the construction of federal buildings, new police facilities around the country are cashing in on the research and availability of the technology. For instance, the Long Beach Police Department’s North Station was completed in 2004. The floor plan is configured around the diagonal of the square to provide a readily identifiable public entry at the corner of the site. The lobby is protected from vehicle invasion by the monument sign. Other discrete hardening features protect the facility without making it look like a fortress.28

Another example is the Jack Evans Police Headquarters in Dallas, Texas. The six story, 650,000 square foot building incorporates several hardening techniques including a 90 foot setback from surrounding streets. Bollards to prevent vehicles from approaching were installed between the building and the street and hidden in landscaping and planter walls. Police can also quickly close any of the streets flanking the complex by tripping pop up wedge barriers buried in the road surface.29


The final area of discussion for the police facility of the future is the construction of high-performance buildings. If you wanted to target a single building type in the United States to reduce energy consumption and promote sustainable design and construction, commercial buildings would be the best place to start. Commercial buildings, of which police facilities are a member, are becoming the preeminent workplace and their load on our energy consumption is substantial. Consider for a moment the all-day, every-day operating characteristic of our traditional police facilities. There has been a recent trend growing on the part of building owners, facility managers, architects, engineers and others in the construction field to design and construct commercial structures to get the most out of least. Green Architecture is a building design that incorporates energy efficiency, sustainability, earth-friendly and high performance design that has low short-term and long-term life-cycle costs. Green Architecture is healthy for its occupants and has a relatively low impact on the environment. The principles of Green Architecture and whole building design and construction can be applied to commercial buildings of any size.\textsuperscript{30}

High performance building design (Green Architecture) is an all inclusive philosophy and such buildings are often the products of a team approach to the design of a building and its various systems. The design team should include not only the architects, engineers, occupants and owners, but also specialists in indoor air quality, materials, energy costs, etc. The design process also takes into account the interaction of the whole building structure and systems. In the past, research into isolated building

components did not take into account how individual systems affect one another.\textsuperscript{31} For example, a building that uses extensive day lighting techniques will reduce the amount of heat given off by lighting fixtures, which allows a smaller air conditioning unit to be used. The whole-building philosophy, or Green Architecture, considers site, energy, materials, indoor air quality, acoustics, natural resources and how they are interrelated.

Four years ago, the U.S. Green Building Council, an association of architects, builders and other green specialists, adopted the Leadership in Energy and Environmental Design (LEED) certification system, which sets out standards that a building must meet to qualify as environmentally friendly.\textsuperscript{32} The categories are evaluated in five areas of human and environmental health including sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. LEED has become the nationally accepted benchmark for the design, construction and operation of high performance green buildings.\textsuperscript{33}

Green Architecture has slowly made its way into the police facility of the future as evidenced again in the new Long Beach Police Department’s North Station. In the new construction, sustainability features include daylight provided through clerestory windows along the spine of the diagonal so that all interior working spaces have natural light. Photovoltaic panels cover the flat portion of the room, significantly offsetting the energy costs.\textsuperscript{34} Other examples can be found in the new Oregon State Police Headquarters and the Roosevelt Police Facility, which is the new home to the Eugene

\textsuperscript{31} Ibid
\textsuperscript{32} Lacayo, Richard, “Buildings That Breathe”, \textit{TIME Magazine}, August 26, 2002
\textsuperscript{33} U.S. Green Building Council, Leadership in Energy and Environmental Design, (www.usgbc.org)
\textsuperscript{34} “Special Focus: Police Facilities”, \textit{The Police Chief}, May 2006, page 42
Police Department in Eugene, Oregon. In both cases, the projects incorporated a number of sustainable design features such as natural day lighting, motion sensing lighting controls, energy efficient HVAC systems, generous use of native plants in the landscaping and bioswales for pretreatment of storm waters.\textsuperscript{35}

The City of Santa Monica was the first city facility to be awarded the U.S. Green Building Council’s LEED Silver certification for Green Architecture in 2003. Their design features sustainable building strategies such as efficient furnace and computer controls, an under floor air distribution system and automatic day lighting controls used to achieve performance exceeding the Title 24 Code by 36 percent. Title 24 Code refers to the California Code of Regulations also known as the California Building Standards Code applying to all occupancies in California. The building also catches water from the roof and additionally uses recycled water for irrigation and flushing of toilets. Where practical, the building uses recycled materials for construction like in the floor tiles and the material choices impact energy heating and cooling efficiency.\textsuperscript{36}

**Summary**

What does all this mean, you might ask? The police facility of the future will remain very much the same as it has over the past 30 years with regard to service delivery models and the impacts of future work forces. While work forces will increase over the next 10-15 years, the increases will not cause a major change in the way we operate the internal components of our future police facilities. In this description, “components” are described as the inner workings of the facility such as office space, furniture use, interior

\textsuperscript{35} Kruithoff, John, “\textit{A Case Study: Using the IACP Police Facility Planning Guidelines}”, The Police Chief, July 2005.

\textsuperscript{36} Santa Monica Green Building Program, (\url{http://greenbuildings.santa-monica.org/casestudies})
design aspects, computer technologies and the daily tools to do the job. In fact, the changes regarding green architecture and target hardening might not be readily noticeable, but are significant. Officers will likely continue to, in most cases, work out of a centralized police facility that is sufficient and meets the base standards for the agency size and expectations for the community. The public will still be able to conduct business from the local police station, but only from the lobby area and only through traditional glass windows. The public will rarely have free access to the inner building and there will not be other convenient amenities. The police facility of the future will be a place to do “police” business and the public will rarely go there unless they have to.

On the other hand, new construction or remodels of old facilities will have a vastly different approach than the police facilities of the past. Recent world events and trends will have a significant impact on the way we construct new police and public safety buildings. The future will focus on security, which involves cutting edge technologies in the microbiotics fields. It will also involve Target Hardening approaches involving new building materials and construction techniques that turn regular buildings into “super buildings.” Finally, Green Architecture ideas that provide sustainability and environmentally friendly footprints in the community will lead the way for others wishing to construct buildings that use resources responsibly. Green architecture in future police facilities serves more than just efficiency. It helps employee health issues and communicates with the public that government cares about the environment.

The design of a police facility is no longer a purely law enforcement issue. It involves incorporating other perspectives and other needs to build new facilities that achieve significant levels of improved effectiveness in a variety of areas. Police facilities
of the future can improve effectiveness in terms of community relations and public image by creating a facility which is both attractive to the public and which encourages the public to be a partner with law enforcement. The appearance can promote the image of professionalism for the organization and its members. It can also enhance employee relations beginning at the point of recruitment (employees like to come to work in nice places) through the enhancement of everyday life in the building. To do less is to live in the past; haven’t we already spent enough time there?