

**AppTec
Bio Manufacturing & Testing Facility**

success story

Single Source Project Delivery

**Engineering
Construction
Compliance**



integrated project services



Services Offered:

Consulting and Strategic Planning

Full-Service Design/Engineering

- Architectural
- Civil/Mechanical/Process
- Electrical/Environmental
- Health and Safety
- Manufacturing Equipment
- Automation

Design/Build Project Delivery

- Scheduling/Estimating
- Construction Management
- Owner Equipment Installation
- Commissioning

Compliance/Validation

Client Benefits:

Guarantees

Minimal Financial Risk
Functional, Compliant Facilities

Simplicity

Technical Expertise
Single-Source Project Management
Complete, One-Stop Resource

Speed

"Fastest Possible" Project Delivery
Multi-Task Capability

Value

Efficiency to meet business needs
Financial Accountability

Flexibility

Solutions for Tomorrow's Needs

A Lot Depends on Your Success

During its heyday the Philadelphia Naval Yard employed 45,000 skilled workers who produced 53 ships and repaired nearly 600 more in the four-year period 1937 to 1941. Throughout the Second World War, the Naval Yard provided good jobs to Philadelphia's skilled labor workforce. By 1996 the shipyard was disestablished and joined the ranks of unutilized urban acreage. State and city officials clearly understood the financial impact the situation would have on the region and rallied their efforts to renovate this now empty lot into a corporate campus focused on revitalizing the area.



In 2002, the city of Philadelphia engaged Liberty Property Trust to facilitate the redevelopment of a portion of the Naval Yard. Liberty worked with an international team of designers and architects to develop a comprehensive plan for the 600-acre site. As the economic development side of the equation solidified, a crucial element for success was missing - an anchor company for the site.

Biotech in the City of Philadelphia

AppTec is a company that provides a wide array of services for the biopharmaceutical and medical device industries. Priding itself as a single source provider, AppTec offers testing, contract research and development and specializes in cGMP manufacturing practices. In early 2003, AppTec announced its decision to develop a 75,000 square-foot manufacturing and laboratory facility to supplant their Camden testing facility. AppTec chose the Philadelphia Naval Yard as their site. Construction was scheduled for a first quarter 2004 completion with validated cGMP space available the second quarter 2004. To meet this challenging schedule, AppTec turned to a like-minded firm for the project.

Enter IPS

Integrated Project Services (IPS) is an integrated provider of engineering, construction management, commissioning and validation services with extensive experience in cGMP compliant facilities. IPS specializes in providing solutions for the life sciences industry. Noted for their process engineering capabilities, IPS is a pioneer in fast-track design/build and designing to a targeted cost. The

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similarities between AppTec and IPS were evident from the onset. Both companies view themselves as sole source, integrated service providers in their respective fields with emphasis on cGMP driven performance. Both companies support a project management centric culture with a single point of contact to achieve success for their clients. And both companies understood the far-reaching consequences this project would have on the Philadelphia region.

AppTec understood the positive aspects of locating in the heart of a major metropolitan area. Among the factors that influenced AppTec's site selection were the proximity of the Naval Yard to mass transit and the Philadelphia International Airport; the ability to relocate existing staff and ongoing operations; and the availability of a qualified, skilled labor pool. The proximity of a number of prestigious universities, colleges and a healthy pharmaceutical industry in the tri-state area of Pennsylvania, New Jersey and Delaware was also a principal factor in AppTec's site selection process.

Value Added Service

AppTec selected IPS to oversee the construction management of the project, to design the manufacturing side of the facility and to fit out the laboratory and office space based on criteria that included IPS as a full service provider of design, build, commissioning and validation. In addition, IPS brought biopharmaceutical experience, an extensive reference list, process resource modeling capabilities, a dedicated project team and a local presence to the project. With the team now determined, AppTec and IPS turned to the challenge at hand – completing a state of the art facility quickly and on budget.

"IPS managed to overcome the challenge of an accelerated schedule with our fast track design/build approach," Andy Signore, IPS CEO and Co-Founder recalls. "By utilizing concurrent efforts in lieu of redundant efforts, we shaved weeks off the schedule. We worked with AppTec to develop the validation master plan, keeping construction sequencing in mind, to facilitate the entire commissioning and validation effort. We also employed peer review by our design and process engineers as a quality control point to further improve the process."

The fast track delivery paid off. In late December 2003, a potential AppTec client toured the facility when the manufacturing area construction was barely underway. The client expressed skepticism that the project would be completed on schedule. During a second visit in February 2004, the same client witnessed significant progress. The client was now convinced the May start-up date was real and became the first new client AppTec signed for the Naval Yard manufacturing facility.

We Do What We Say

The Naval Yard facility represents new territory for AppTec. The intent is to extend their core competency as a product testing company into the biopharmaceutical contract manufacturing arena. "By expanding our services into contract manufacturing, we believe we would have a unique opportunity to offer a valuable, single-source program to biopharmaceutical companies," said Bonnie Baskin, Ph.D., CEO of AppTec. "Not only are we extending our core competency, we are also building on our existing strong relationships with our biopharmaceutical clients."

IPS delivered the technical expertise AppTec needed by listening. "We established the cGMP design specifications early on in the project, always keeping the target cost in mind," noted Signore. "We listened to AppTec and helped them determine what they needed. Then we delivered on what we said we're going to do."

Construction of AppTec's new mammalian cell culture facility tapped into IPS' biotechnical experience in numerous areas. The Naval Yard facility encompasses 16,000 sq. ft. of cGMP manufacturing space, 19,000 sq. ft. of testing laboratories, 21,000 sq. ft. of administrative offices, an 8,000 sq. ft. warehouse and a 5,000 sq. ft. of mechanical plant. In addition, 6,000 sq. ft. of space was built to accommodate future expansion.

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The major manufacturing area consists of a number of process-based suites: cell bank suites, inoculum preparation suites, nine 100l to 2500l capacity bioreactors, automated chromatography suites and an isolator based manual filling systems. The project also required in-depth knowledge of critical utility infrastructures including water for injection, clean steam, purified water, bulk gases, clean process air from local air compressors and biowaste handling systems. AppTec's vision and IPS' practical application of value added engineering complimented each other well. "IPS is a lot like us. Both our companies serve our clients through strategic integration, adding value every step of the way," states Joseph Hughes, Ph.D., Executive Vice President and General Manager for AppTec.

Regional Economic Impact

As plans for the facility's ribbon cutting ceremony *evolve*, one theme resonates. "This is a landmark project for the Naval Yard. It shows people that this can work in Philadelphia," Andy Signore contends. "AppTec is the first high-tech tenant opening its doors in the complex. It proves that Philadelphia is a viable option for the growing biopharmaceutical industry."

"We are delighted to be the first new private construction at the Philadelphia Naval Yard," says Bonnie Baskin. "From the

beginning we recognized the benefits of locating in Philadelphia. For one thing, the area has an established and expanding base of major pharmaceutical and research institutions. For another, it offers an educated, sophisticated population from which to draw our employees. It's exactly where we need to be in order to grow and thrive."

The Naval Yard could have become another prime example of urban blight. Instead, the teaming of governmental and commercial entities transformed the potential blight into potential bounty. IPS, the city of Philadelphia, the state of Pennsylvania and AppTec are truly achieving great things together.

"At each point, as a parallel process, we engineer compliance. Meeting federal regulations with capitalist ingenuity and making a quantum leap in the design/build of your manufacturing facility."

