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AI Engineers, Inc.

# The DIGITAL Download

## 24/7 CHALLENGES: UPGRADING RENOVATING & BUILDING ESSENTIAL PUBLIC FACILITIES

For over two decades, AI's building systems group has been at the forefront in assisting, advising, and coordinating upgrades and renovations for many public facilities including hospitals, offices, schools, and transportation building hubs. Our work has included design, construction, and maintenance for such buildings.

AI's focus has always been on using state-of-the-art design in order to produce more functional, comfortable, and sustainable systems for buildings; be they structural/civil/site upgrades, HVAC systems, or M/E/P. Upgrading existing buildings that run on a 24/7 operational basis such as hospitals or mass transit facilities presents our design and construction professionals with significant challenges that compel them to think out of the box.

Over the years, AI's experience with the Veteran's Administration (VA) and its hospitals are a true example of our work history and our achievements in a 24/7 environment. Projects completed over the years under contract with the VA illustrate our quest for *ingenuity,*

### Recent Awards & Acknowledgements

AI is proud to be ranked by the Hartford Business Journal as the Fourth Largest Engineering Firm and Second Largest Minority-Owned Business in Greater Hartford!
We have approximately 170 employees, over 50 PEs, 6 offices and are still growing!

AI was honored to receive the 2016 Merit Award for the Steelpointe Roadway Reconstruction project in Bridgeport, CT. This award was presented by the American Council of Engineering Companies (ACEC) of CT and was attended by Aslam Siddiqui, PE and Piya Hawkes, PE.

*innovation, and intelligence* especially so for a client that serves our Veterans.

## VA DIETETIC KITCHEN UPGRADES
## WEST HAVEN CAMPUS, CT

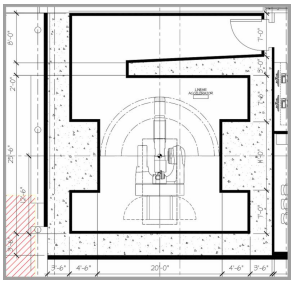
Not upgraded since the 1940's, AI had the privilege of designing a new hospital kitchen for the VA in West Haven, CT. The biggest challenge on this job was achieving the necessary upgrades through careful consideration of a host of options.

The options considered included changes in the kitchen's functionality since the original design. Specifically, the modifications included converting a full service kitchen facility supporting 1,200 beds to a cooking/baking facility that prepares approximately 700 meals per day for a minimal inpatient facility, large onsite and satellite clinics, and support facilities. This significantly reduced storage and refrigeration needs.

Among various options considered during planning phase, *"Renovate and Optimize"* was selected. This option involved renovating the existing bake shop space and provided new systems to allow the kitchen to be consolidated into a fully renovated area.

As the lead consultant, AI provided complete building services which included civil, structural, electrical, and mechanical design services and managed architectural and hazardous materials subconsultants to provide a complete design solution to the VA.

## VA REPLACEMENT OF LINAC UNIT
## JAMAICA PLAIN, MA



AI has designed a building addition to house a new Linear Accelerator (LINAC) device at the Veterans Administration Medical Center facility in Jamaica Plain, MA. A linear accelerator is the device most frequently used for beam radiation treatments for patients with cancer, and AI is proud to be a part of such an important project.

The linear accelerator is used to treat all organs of the body. It delivers concentrated high-energy x-rays to the region of the patient's tumor.

Since a linear accelerator is a piece of specialized equipment, it requires a specific detailed design that addresses how it will be used. AI ensured that there were specialized reinforced concrete slabs/concrete walls/ceilings that provide radiation shielding, can be seismically isolated from the existing structure, and can incorporate anti-vibration protocols so that the machine can function properly. Additionally, the HVAC systems provide redundant standalone cooling for LINAC equipment and a separate system for the patient spaces.

As the lead consultant, AI provided complete design services which included civil, structural, electrical, and mechanical design. AI managed geotechnical and hazardous materials subconsultants to provide a complete design solution to the VA.

## ConnDOT BUS STORAGE & MAINTENANCE FACILITY
## WATERBURY, CT

The Waterbury Bus Garage is a $90 million, 376,000 sf. project which will add to the existing Connecticut Transit infrastructure to help expedite and better bus service to and from Waterbury. It is expected to be completed in 2017 and will handle between 100-150 buses.

As lead consultant, AI has been providing construction management and inspection services for the construction of this new facility which is designed to meet the Connecticut High Performance Building codes. AI's scope of work also included the design of the building's plumbing and fire protection systems. The new two-story bus facility is being constructed on a former drive-in theatre site located on the banks of the Naugatuck River.

Services and design include a natural gas piping system; domestic hot, tempered and cold water systems; sanitary drainage and vent system; and storm drainage system including holding tanks and oil/particle separators for the sanitary waste systems only. The design for the building fire protection includes sprinkler and standpipe (wet or dry) systems. The foundation and concrete slab supporting the bus deck/parking deck are currently under construction.

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