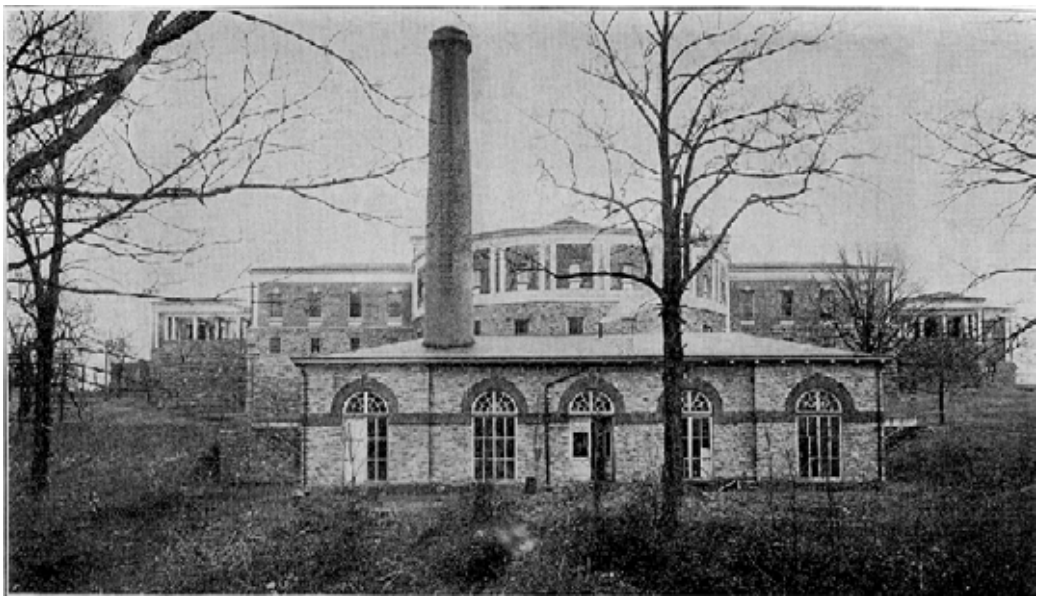
June 2004

MAIN HEATING PLANT ENVIRONMENTAL COMPLIANCE UPGRADE PROJECT

The University of Virginia will spend $51.8 million for improvements to the Main Heating Plant to ensure that the Heating Plant remains compliant with federal and state Clean Air Act regulations, and meets University needs. Located at Jefferson Park and University avenues, the Heating Plant furnishes steam and hot water to heat U.Va.'s Health System and most of its academic facilities.

Here's some history...

U.Va.'s first plant (right photo) was part of the McKim, Mead, and White re-building and expansion of the University in 1896. It was located behind Cabell Hall and provided heat and electricity to the expanding Grounds. The electricity produced was direct current (DC) and it served the University until 1917 when AC power was adopted.



This photo (left) from the early 1960's shows the second (lower of the two) and third (the current) heating plants. The second heating plant was built in 1923 when the Medical School Building and Dining Hall facilities were added to the hospital complex. The third heating plant was added in 1950 to provide steam and hot water for the post-war expansion of the University.

Note the coal piled up behind the heating plants. The second heating plant was situated next to the University spur of the C&O railroad so coal deliveries needed no additional transportation. In the late 1980's, coal silos and a coal unloading facility were added as the University Hospital was added to the complex.

Project Objective

Upgrade the Main Heating Plant to ensure compliance with current and proposed environmental regulations, and to meet the heating needs of the University.

Plans for these improvements have been in the works since 1996.

- 1996 - U.Va. initiated discussions with the State Department of Environmental Quality (DEQ).
- 2001 - U.Va. hired RMF Engineering, Inc. of Baltimore to do a Master Plan for the Heating Plant.
- 2002 - As a result of the Master Plan, U.Va. requested and received authority from the State to do preliminary design.
- 2002 - U.Va. hired RMF to do the preliminary design for Heating Plant upgrades.
- 2003 - U.Va. submitted an air permit application based on the Master Plan and later requested funding and authority to finish design and to construct the project.
- 2004 - U.Va. submitted a revised air permit application based on preliminary design.

Background

The University of Virginia heats all of its Health System and most of its academic facilities with steam and hot water furnished by the Main Heating Plant. This project will replace one 54-year old boiler and one 47-year old boiler and provide environmental controls for the entire Heating Plant as required for the University to remain compliant with federal and state clean air regulations and to meet the terms of a new air permit, which is being formalized with the Virginia DEQ.

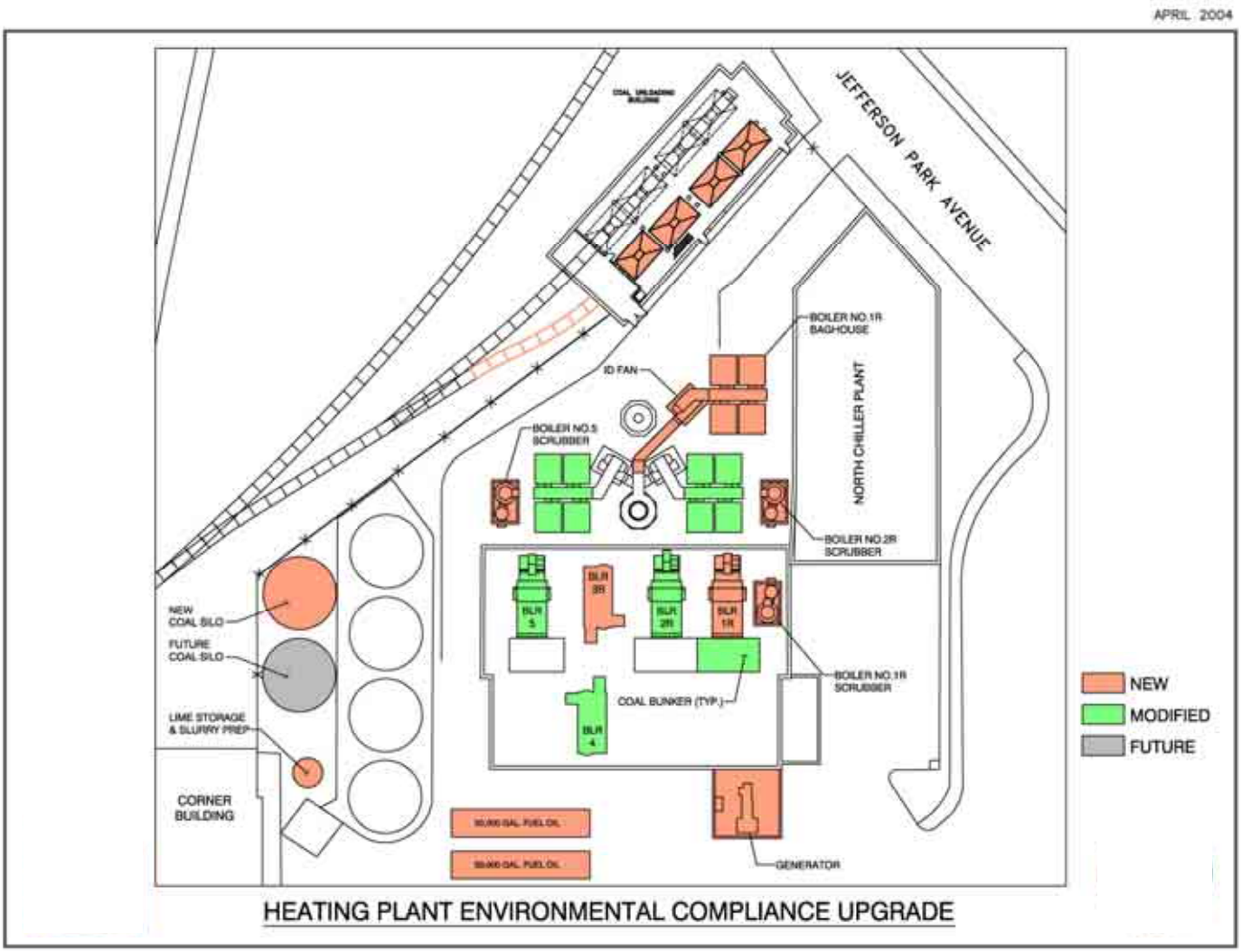
The Heating Plant has been built in increments over 55 years. The site is very tight, eccentrically shaped, and bounded by critical activities on each side: a hospital, a major railroad, and a key City arterial street. The Heating Plant supports highly critical facilities: an acute care hospital, laboratory and research facilities, housing for more than 3,000 University students and classroom, library, and other academic buildings. Accordingly, extraordinary phasing and staging measures will be required to assure that the plant remains on-line, with sufficient capacity, at all times during the modernization project.

Existing silos as seen from University Avenue.

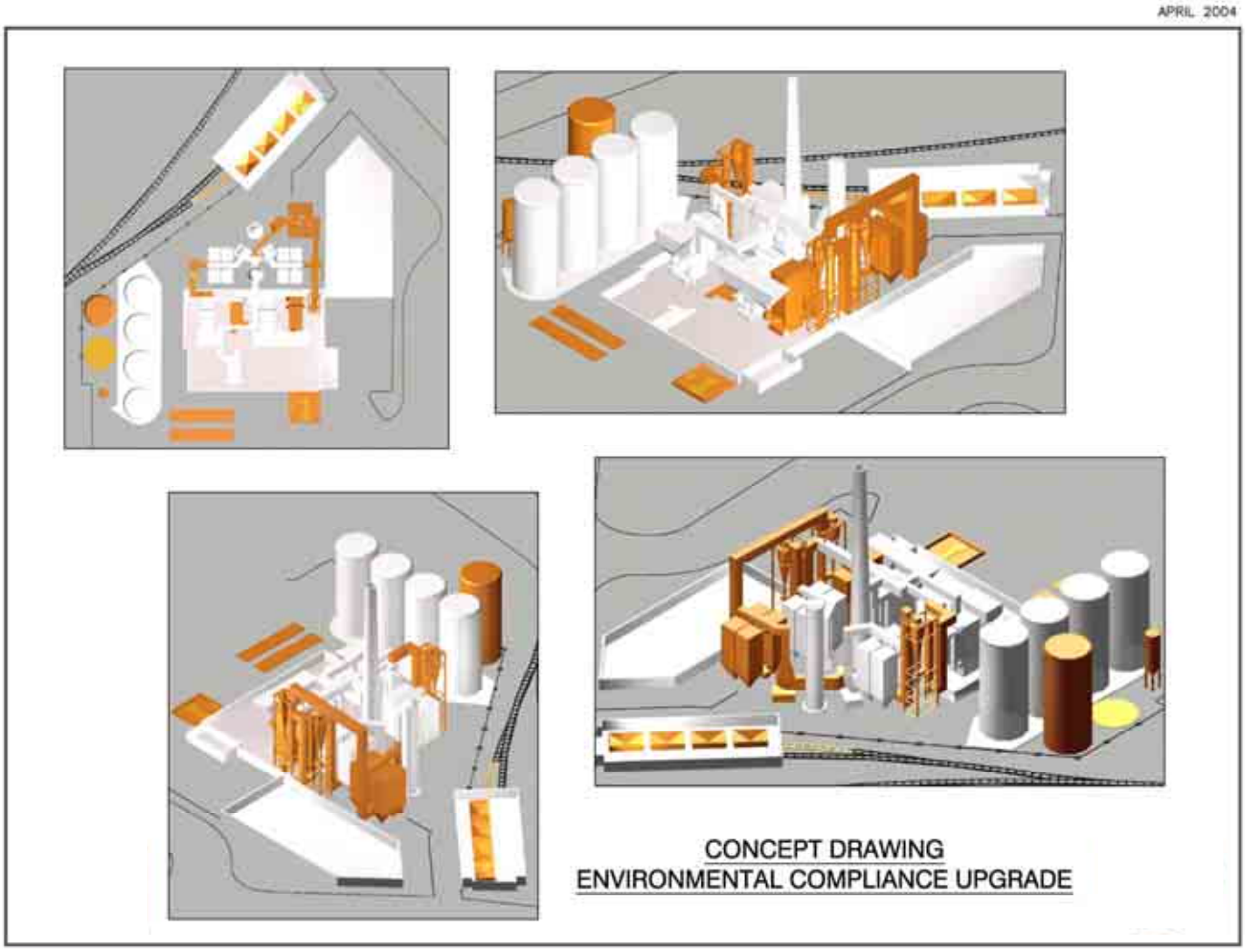
This photo representation shows that the new silo is tucked into space adjacent to the existing silos.

The Elements of the Upgrade

Improvements to the Heating Plant include two new boilers, three additional scrubbers and a new baghouse which will help ensure removal of emissions from the boilers. The “new” (see key) square at the lower right outside the Heating Plant represents replacement generators that will provide backup power in the event of an electrical outage. The large “new” circle in the lower left is the fifth coal silo which will increase coal storage capacity. The gray circle is a sixth silo we hope to add in the future. The rectangles in the top center are rail cars within the existing building. The parallel rectangles in the bottom left are underground oil storage tanks which will replace two existing tanks.



Concept Drawing with Improvements in Orange



At present, we expect construction to begin in April 2005 and anticipate completion during Spring of 2008.
Questions? Call Chuck Boldt, project manager, at 982-4526 or cb7c@virginia.edu

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