

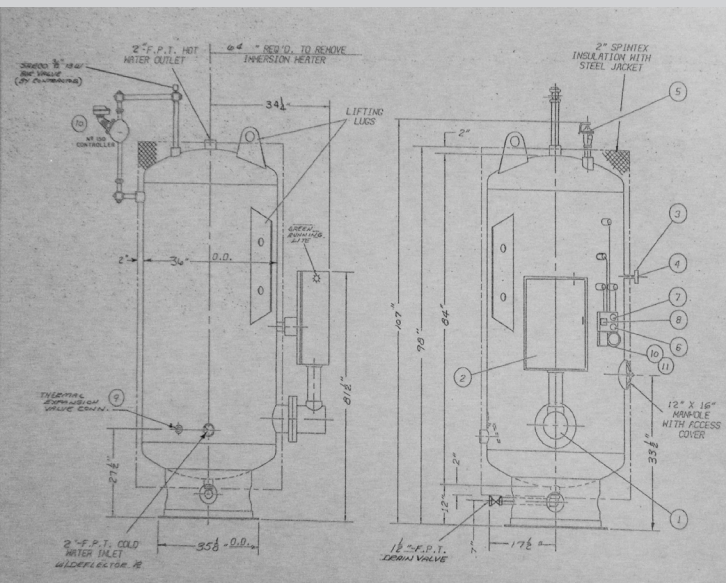


## Introduction

The Lehigh County Jail is a state-of-the-art correctional facility located in Allentown, Pennsylvania. This 250,000 square foot high rise facility has a maximum capacity of 1,352 inmates, which are separated between maximum security housing and short-term local sentencing. In 1992, the jail decided to update their facilities by moving from its old location to this new

building. As it was being constructed, **Blankin Equipment** knew the rigorous demands of the jail could only be met by Patterson-Kelley equipment.

For nearly thirty years, two **Hot Water Storage Heater Series P-K W 144 V2 /4V** have provided constant and efficient water heat to the facility.



## Challenges

After thirty years of continual use, the site wanted to upgrade the tube bundle to restore optimal performance. The blades of the original electric element bundle had begun to corrode. However, the bundles that needed to be replaced, are not commercially available “off-the-shelf”. The electric heating element bundles in these units are considered a proprietary Patterson-Kelley design. The only options were to update the operational water heaters or replace them entirely.

### Patterson-Kelley

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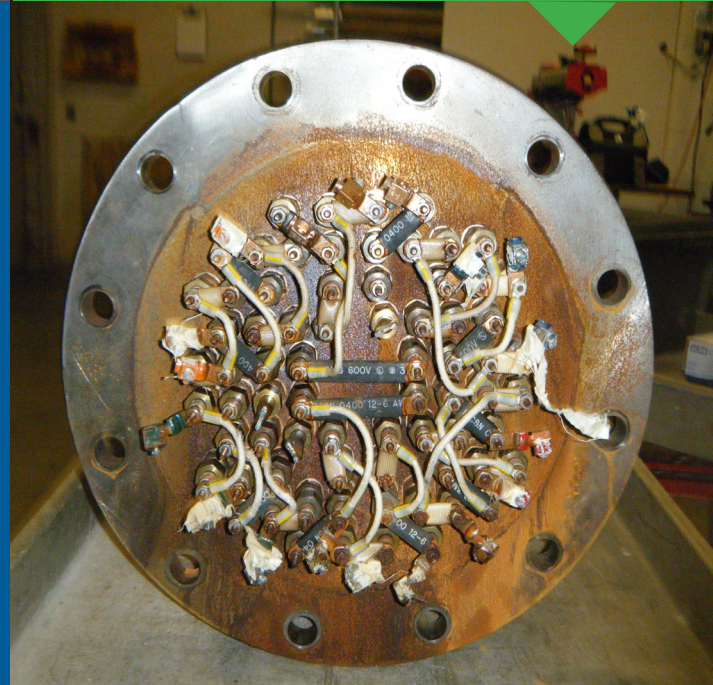
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# Bundle Design

## P-K Solution

Despite the challenges listed above, the water heaters had worked so well, that the jail was adamant about continuing to use P-K products. With this in mind, the obvious solution for the Lehigh County Jail was a complete electric heating bundle replacement by the Patterson-Kelley team. With only a series of pictures and a few measurements, the P-K engineering and aftermarket sales team were able to completely review, redraw, and reconstruct the tube bundle to match the exact dimensions of the previous heating bundle.



**“The P-K electric heating element bundles are engineered to maintain critical dimensions (bundle length, bolt circle, etc.) and are electrically wired or bussed in a way that is compatible with the electric power/control panel on each P-K electric water heater. Over the years, P-K has engineered hundreds of electric heating element bundle types for projects across the globe.”**

*Patrick Villaume  
P-K Applications Engineering Manager*

## Efficiency

While this update is still fairly new, the new bundle is thriving under the inflexible needs and conditions of the jail.

The new electric bundles and blades are now working properly, and the system is heating more efficiently. This will save energy for the full life of the water heater, and help the facility save money.

With this large building and over a thousand inmates and staff members on-the-line, the water heater has been restored to optimal performance thanks to P-K's engineered aftermarket solutions.

*For more information, please visit [pattersonkelley.com](http://pattersonkelley.com).*

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