

**WOODBURY COUNTY BOARD OF SUPERVISORS AGENDA ITEM(S) RE**

#10

Date: 6/29/2016 Weekly Agenda Date: 7/05/2016

**ELECTED OFFICIAL / DEPARTMENT HEAD / CITIZEN:** Kenny Schmitz, Building Services

**WORDING FOR AGENDA ITEM:**

Courthouse Steam System Analysis

**ACTION REQUIRED:**

Approve Ordinance

Approve Resolution

Approve Motion

Give Direction

Other: Informational

Attachments

**EXECUTIVE SUMMARY:**

Resource Consulting Engineers will provide information and findings on the Courthouse HVAC & Hydronic Systems.

**BACKGROUND:**

On April 5th, 2016 the Board of Supervisors approved a contract with Resource Consulting Engineers to develop Courthouse drawings to identify current ventilation, cooling, hydronic steam heating system/ traps, & heating /cooling control components.

**FINANCIAL IMPACT:**

N/A

**IF THERE IS A CONTRACT INVOLVED IN THE AGENDA ITEM, HAS THE CONTRACT BEEN SUBMITTED AT LEAST ONE WEEK PRIOR AND ANSWERED WITH A REVIEW BY THE COUNTY ATTORNEY'S OFFICE?**

Yes  No

**RECOMMENDATION:**

**ACTION REQUIRED / PROPOSED MOTION:**

Information only

June 29, 2016



RESOURCE  
CONSULTING  
ENGINEERS LLC

**Kenny Schmitz**  
*Director of Building Services*  
Woodbury County  
620 Douglas Street  
Sioux City, IA 51101

Re: Woodbury County Courthouse - Steam Trap Study Commentary

Dear Kenny,

We have completed our study locating and cataloging steam traps at the Woodbury County Courthouse Building. Based on our investigation in the building, along with analysis of available existing building drawings, we have identified 298 total steam traps. Of these traps, 205 are thermostatic type (serving radiators, panel radiators, fin-tube radiation, etc.), 82 are thermostatic type (serving air handling unit coils, re-heat coils, drips, etc.), and 11 are inverted bucket traps (typically serving humidifiers or loads requiring condensate to be lifted to return main connection). Please refer to the drawings and schedules dated June 23, 2016 showing locations of each of these devices within the building. Based on our investigation and review with Building Services Personnel, it appears that only a few of these traps have been serviced in the past 20 years, and service has only occurred when a known issue was identified with a specific trap. Based on this information, we can provide the following comments:

- The building steam traps should be serviced more frequently than they have over the past number of years – this lack of service could lead to significant numbers of traps failing to operate properly
- A number of traps appear not to have been serviced for much longer than 20 years, increasing the potential that they may not be operating properly
- Thermostatic traps typically fail open, if any significant percentage of these traps have failed it will result in a great deal of wasted energy
- Float & thermostatic traps typically fail closed, which prevents heating coils from operating correctly, and could result in numerous comfort complaints
- Some traps are installed in areas where they are not accessible for maintenance or emergency access
- One float & thermostatic steam trap was found to be installed inverted, likely indicating it has not functioned correctly since it was installed

Considering this information, we strongly suggest that the steam traps throughout the Courthouse building be serviced as soon as it is feasible. The servicing of all steam traps in

the building will almost certainly have an immediate impact on both building energy consumption and occupant thermal comfort. Please do not hesitate to let me know if you have questions, or if I can provide additional information.

Respectfully,

A handwritten signature in black ink, appearing to read 'C. Metzger', with a long horizontal line extending to the right.

Corey B. Metzger, PE  
Principal  
Resource Consulting Engineers, LLC