Using Figure 25 on page 53 In the Guide & Workbook, to identify a problem with Maria’s plan change.

Return air pathway blocked. Thus, the HVAC system will not be able to operate as designed.

Can you offer a solution to Maria and explain why it will save her time and money?

Any time and money saving solution would start with not moving duct or an HVAC system. In this case the designer wanted the return over the heat adding equipment in the bar so that warner air would not cross over occupied space. Thus, recommend the partition doors be made of an open metal grid style of gate or roll down door rather than a solid material.

Based on the Air Distribution Design Checklist on page 54 in the Guide & Workbook, which of the following should be done if you can only do one?

1. Make sure there are adequate return air pathways.

2. Make sure the return is positioned high when the supply duct is positioned low.

Make sure there are adequate return air pathways.

Based on the Air Distribution Design Checklist which of the following should be done if you can only do one?

1. Make sure the blower fan’s airflow is in compliance with the Manufacturer’s data and at the designed value.

2. Make sure the proper CFM is coming out of every supply diffuser.

Make sure the proper CFM is coming out of every supply diffuser.

Based on the Air Distribution Design Checklist which of the following should be done if you can only do one?

1. Do the duct sketch and component list.

2. Design the component pressure drops.

They are equally important since they are both in the high impact group.

Field Notes:

Return, Return, Return! Why does seem like everyone ignores the return duct design, and the return path! There are a million horror stories out there. For example, a small store allowed a product display case loaded with high intensity incandescent light bulbs to be placed in the front right side of the store. The heat had to cross the entire store to get back to the return. The call was for AC not working. The AC was working properly, they just chose to heat the air up in the front, and bring it all of the way across the store to the return. The answer was to move the display back to under the return or install a return duct over the display and move some supply diffusers to the back of the store. Not as the store manager wanted a bigger HVAC system. Since the discharge air was the correct temperature, a larger system probably would not have helped.