7 Considerations to Make Before Accepting a Value Engineering (VE) Proposal:

TEMPERATURE
Many commercial kitchens, laundry facilities, and hospitals have equipment that discharges at 180°F and more. PVC is rated to 140°F and will fail in these applications. Cast iron soil pipe is rated to 212°F.

THERMAL EXPANSION
PVC expands at over four times the rate of cast iron soil pipe. Cast iron soil pipe has a similar coefficient of thermal expansion as steel and concrete. Expensive expansion joints must be used to account for PVC's movement and extra access panels must be constructed to service those expansion joints. What is the hidden cost of those expansion joints and the extra labor to construct the access panels?

SOUND ATTENUATION
Cast iron soil pipe is over 750% more effective at dampening plumbing noise than PVC. Sound insulating wraps will only reduce the sound a small amount and, in some cases, they will actually increase the sound. What is the hidden cost for the wrap and labor?

HANGER SPACING
Model codes require PVC to be supported every 4 feet. Cast iron only needs to be supported within 18 inches of each joint and every 10 feet. What is the hidden cost labor and materials of having to use over twice as many hangers?

UNDERGROUND INSTALLATION
Cast iron is strong and will not crush underground and the gaskets are designed to allow for cast iron soil pipe to deflect up to 5%. PVC is a flexible material and must be buried in accordance with ASTM D2321. What are the hidden costs of excavating an extra wide trench? What are the hidden costs of the specific fill and bedding required by ASTM D2321? Who is on-site to ensure that the pipe has been buried in accordance with the standard so that costly repairs are not needed in the future?

PLENUM SPACES
Cast iron is non-combustible and requires no wrap or additional protective measures. PVC alone does not meet the 25/50 code requirements when tested to ASTM E84 standard and requires additional protection, such as a fire wrap. What is the added cost of the protective measures or wrap and installation? Who checks to see if it was done properly? Can you ensure that the fire wrapping will remain intact during future renovations?

FIREWALL PENETRATIONS
PVC requires listed fire-stop systems, often using fire-stop collars and material on both sides of the penetration. In addition, expansion of the PVC or building materials may cause that fire-stopping material to be pulled out of the annular space. Cast iron simply needs caulking, grout, or mortar most times to fill the annular space. What is the hidden cost of the fire-stop collars and the installation?

What is the true cost of Value Engineering?