

3/30/2007

Below, I have posted an analysis of the electrical system of the Forest Drive Classroom Building by Charles Wray of Physical Plant. The short version is that we feel the electrical system and other life safety systems in the Forest Drive Classroom Building are in good shape. Additionally, I have requested an analysis of the roof problems and will report this as soon as possible.

Joe Franklin

Mr. Franklin,

I am writing regarding the concerns expressed in the Faculty Senate about electrical system safety at the Forest Drive Classroom Building. Apparently the concerns were expressed following an incident where a bathroom exhaust fan overheated to the point where it's plastic cover melted and burned up. A person walked in the bathroom and saw the smoke and pulled the fire alarm. Smoke detectors in the hallway also activated after the bathroom door was opened and allowed smoke to escape. The building was evacuated. The fire dept responded and the smoke was cleared. Nothing except the plastic fan housing face plate and fan blade actually burned. The ceiling mounted fan housing was metal. Most of the damage was from the smoke produced. The safety systems all worked properly.

This event was very out of the ordinary for an exhaust fan. Normally, the failure of a fan motor or even a wiring short will either cause the circuit breaker to trip before enough heat is developed to cause a fire, or the fan will just quit working completely. In this case, the breaker was found tripped, however we do not feel that motor or wiring failure was the cause of the fire. We believe that the plastic fan blade probably slipped on the motor shaft allowing it to contact the plastic face plate. The heat produced by friction then caused the plastic to catch fire and the heat from the fire caused the wiring to short or the motor winding to short which tripped the breaker. In other words, we do not believe this fire was electrical in nature.

The bathroom fans in this building are relatively light duty fans and are switched through the lighting circuit. They see a lot of run time. Over the years, several of the others have failed and been replaced without incident, as usually happens. This particular fan was one that was original to the building. We have checked the others and this one will be replaced shortly.

The building itself is protected by a fire alarm system and is also fully protected by a fire sprinkler system. The fire in the bathroom was not near hot enough to activate a sprinkler head.

The electrical system, does have type NM cable for all branch circuit wiring (like most residential electrical systems). However, the service entrance equipment, panel feeders, and all wiring devices (switches and receptacles) are all of good commercial quality. The branch circuit breakers are all Square D Type QO which are very good quality.

The other most important factor about this electrical system is that in all the years that it has been in operation, we have had little or no problems with wiring or terminations. The only problems we have had in this facility and it's sister building, Family and Consumer Science, are from circuits occasionally being overloaded by users and breakers tripping (too many things plugged in). I am not at all concerned about the electrical system in this building or the proper functioning of the breakers when needed.