1 Perimeter Radiation

1.1 Classrooms, laboratories, hallways, etc. typically do not require perimeter radiation

1.2 Offices, meeting rooms, etc. typically do require perimeter radiation. This radiation should be on an independent piping circuit so the water temperature can be lower than the VAV reheat coil temperature.

Note: Office occupants frequently push their desks against the outside wall creating a ‘dead spot’ with little air movement. Anyone sitting at the desk will have cold feet. The simplest and best solution is external wall radiation in the offices.

2 Ceiling Plenums

2.1 In harmony with IAC 410 Article 33 all supply and returns are to be fully ducted and are to be solidly connected to the diffusion product.

Note: Technically, 410 IAC 33 (published by the Board of Health) applies to nursery and K-12 schools, but the principles are valid and should be followed for campus projects. Plenums cause numerous problems in balancing and air distribution. Almost without exception, every time we have acquiesced to the cry of “being fully ducted costs too much money” we have had problems with the HVAC system directly attributable to the plenums. Return plenum in interior spaces also cause balancing air distribution and moisture problems caused by the plenum being under a negative pressure pulling air from all the wall cavities, not just the rooms. This has the real potential of pulling in untreated air, which will condense and cause mold and mildew problems.

3 Stairway Dehumidification

3.1 Stairways must have temperature and humidity control.

3.2 An excellent way to achieve this is by using a dedicated AHU. The problem is that the AHU must be on the roof or in the fire rated enclosure; the ductwork cannot penetrate the walls.

3.3 Fan coil units may be used.

3.3.1 It is recommended that, if used, FCUs have the heating coil in the reheat position with a dehumidification control sequence.

3.3.2 FCUs cannot be used to bring in OA.

3.3.3 FCUs must be accessible.

Note: The Armstrong Hall stairway units are an example of units that are impossible to maintain.

3.2 Stairways should have air movement through them. Without definitive dehumidification and air movement there is an increased likelihood of a mildew and odor problem in a stairwell.

3.2.1 This may be able to be accomplished by allowing the relief air from the positively pressurized building to exit through the stairs.

3.2.2 It may also be possible to simply install magnetic hold-opens on the stair doors. In the event of a fire they would de-energize and the doors close. If this is done it may be possible to forego HVAC systems in the stairs, especially interior stairs.

4 Restroom Temperature Control

4.1 Minimum winter temperature is 68°F.

4.2 If the restroom is not on a central AHU then heating can be accomplished using exterior wall radiation.

4.3 In general air conditioning is not required.

4.4 If air-conditioned the design temperature is to be 76°F

5 Positive Building Pressure

5.1 All buildings should have a slight positive static pressure. Provide for sufficient OA intake and appropriate controls to maintain the building at a positive 0.05” SP.