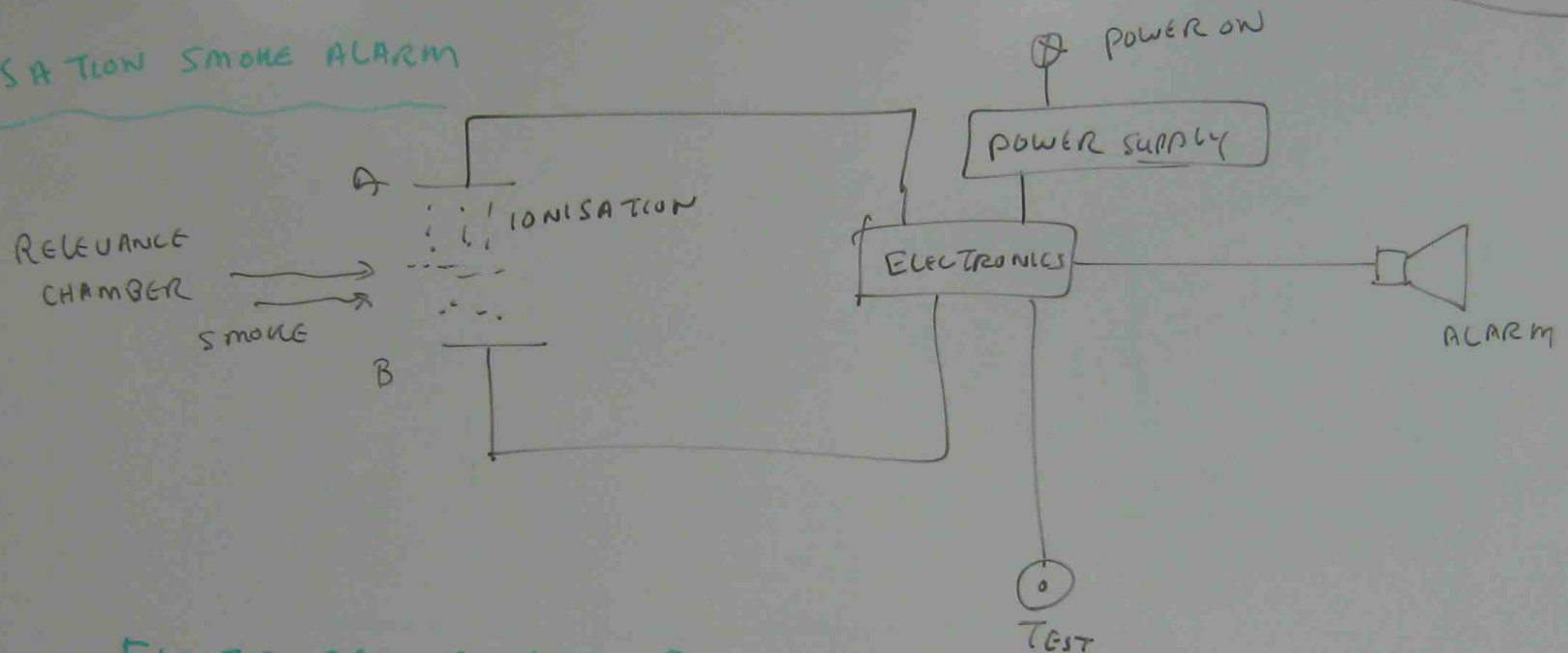


# FIRE PROTECTION - RESIDENTIAL FIRE & SMOKE ALARMS

## IONISATION SMOKE ALARM



ELECTRODES A AND B ARE  
PLACED IN A CHAMBER WHICH IS TO BE  
PROVIDED WITH FIRE PROTECTION.

ORDINARILY, A AND B ARE NOT CONTACTED.

## ALARMS

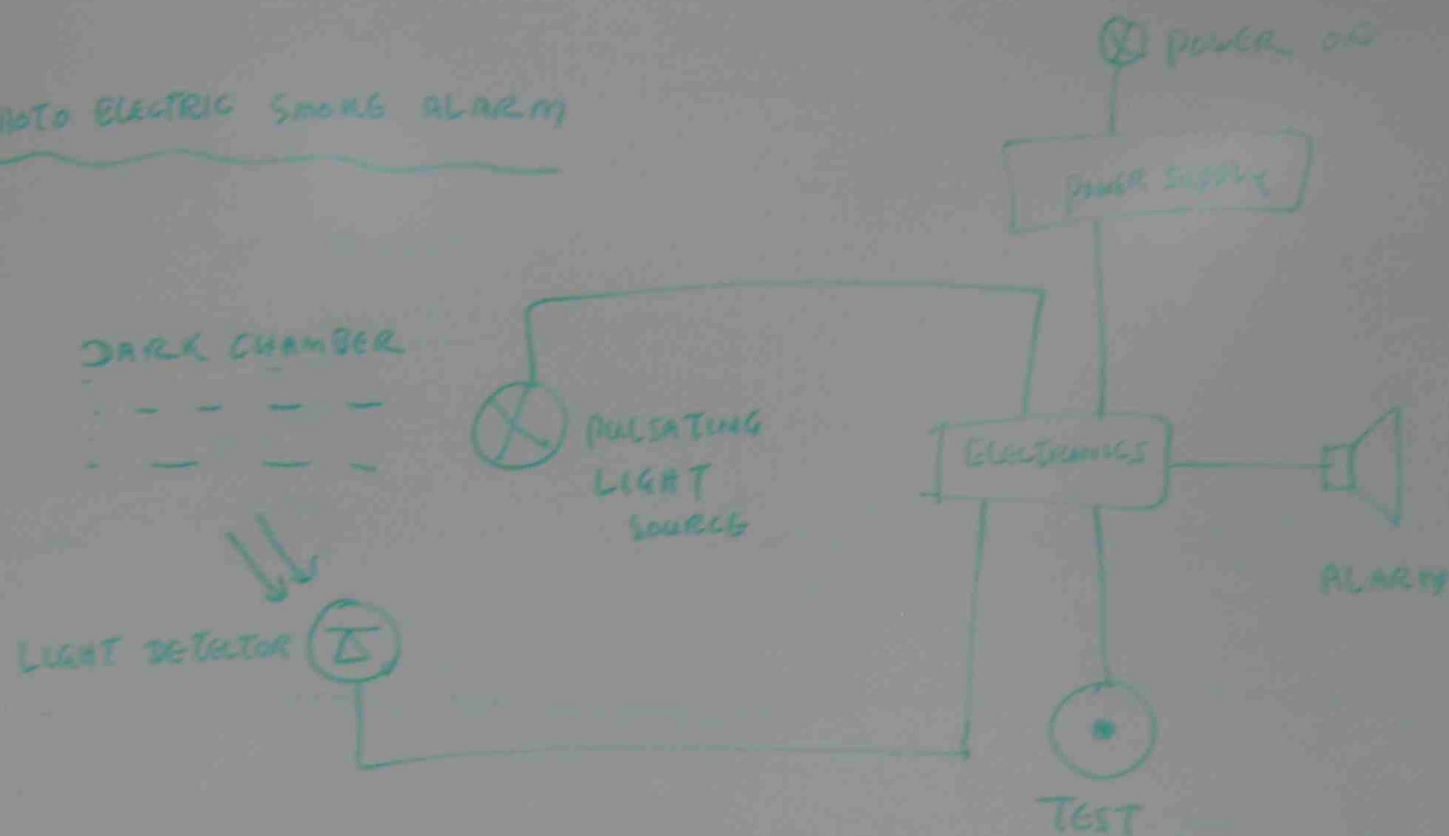
WHEN FIRE BREAKS OUT, SMOKE CARRYING  
ELECTRIC CHARGES ARE FULL BETWEEN ELECTRODES  
A AND B.

ELECTRICAL CURRENT FLOWS BETWEEN A AND B.

THE CURRENT IS AMPLIFIED BY AMPLIFIERS  
TO HAVE ENOUGH GAIN TO SWITCH ON  
POWER CIRCUIT.

THE POWER CIRCUIT CURRENT FLOWS INTO  
ALARM AND ALARM MAKES THE SOUND.

## PHOTO ELECTRIC SMOKE ALARM



LIGHT DETECTOR RECEIVES THE PULSATING LIGHT FROM PULSATING LIGHT SOURCE. THE ORIGINAL FLOW OF ELECTRIC CURRENT PREVENTS THE TRIPPING SWITCH FROM CLOSING.

WHEN FIRE BREAKS OUT THE SMOKE COVERS

THE LIGHT DETECTOR AND STOPS THE FLOW OF ELECTRIC CURRENT. THE ELECTRONICS CIRCUIT DRIVES THE ALARM.

### SELECTION OF ALARM

THE FIRE MOST LIKELY TO CAUSE DEATH (OR) INJURY IS FAST GROWING FLAMING FIRE. THIS TYPE OF FIRE OFTEN PRODUCES LARGE AMOUNT OF TOXIC GAS AND CARBON MONOXIDE. IONISATION ALARM IS SUITABLE.

PHOTO ELECTRIC ALARM IS VERY SENSITIVE EVEN FOR SMOKE COMES OUT FROM COOKING

## INSTALLING SMOKE ALARMS

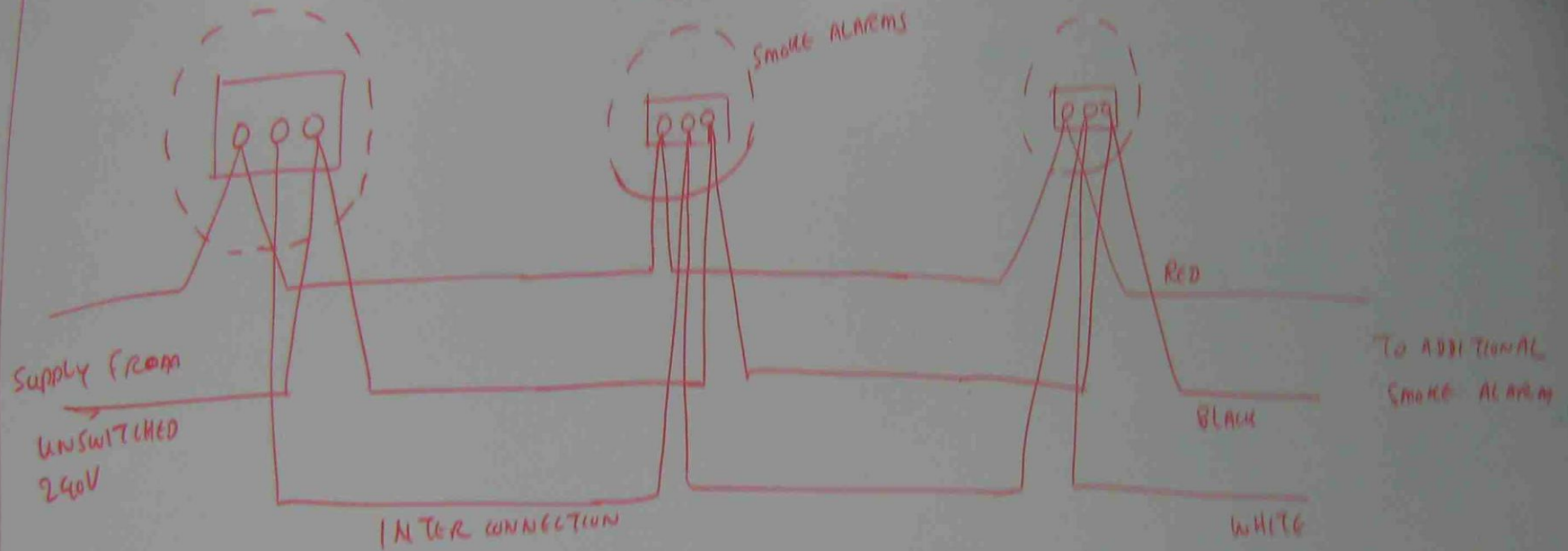
### LOCATION

WHEN CONSIDERING THE LOCATION OF SMOKE ALARMS, THE MAIN REASON FOR INSTALLING THEM SHOULD BE KEPT IN MIND. THE SLEEPING AREAS OF A BUILDING

IS THE MAIN FOCUS OF REQUIREMENT.

BECAUSE THE OBJECT OF INSTALLING A SMOKE ALARM IS TO DETECT SMOKE BEFORE IT REACHES THE SLEEPING OCCUPANTS OF DWELLING.

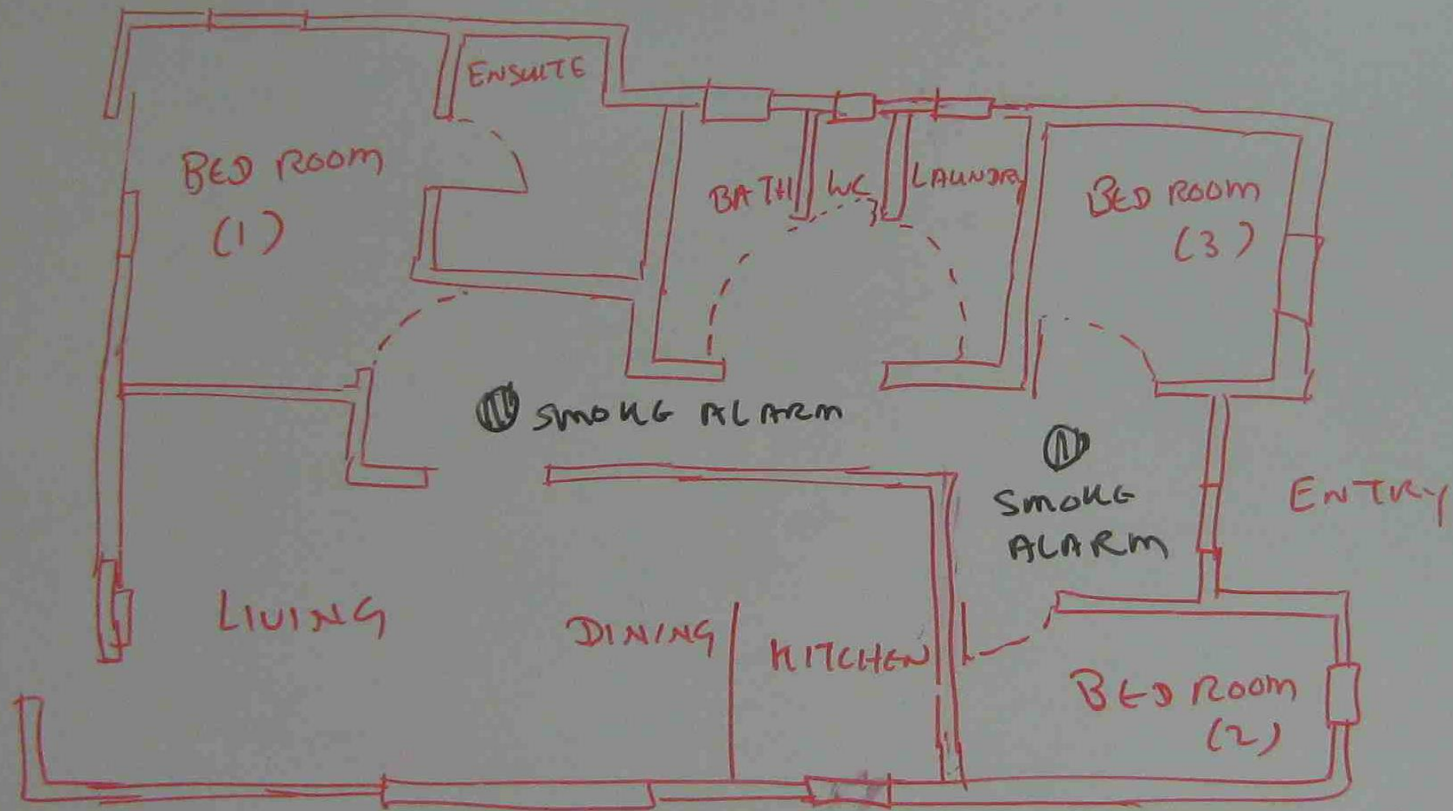
## WIRING CONNECTION FOR SMOKE ALARM



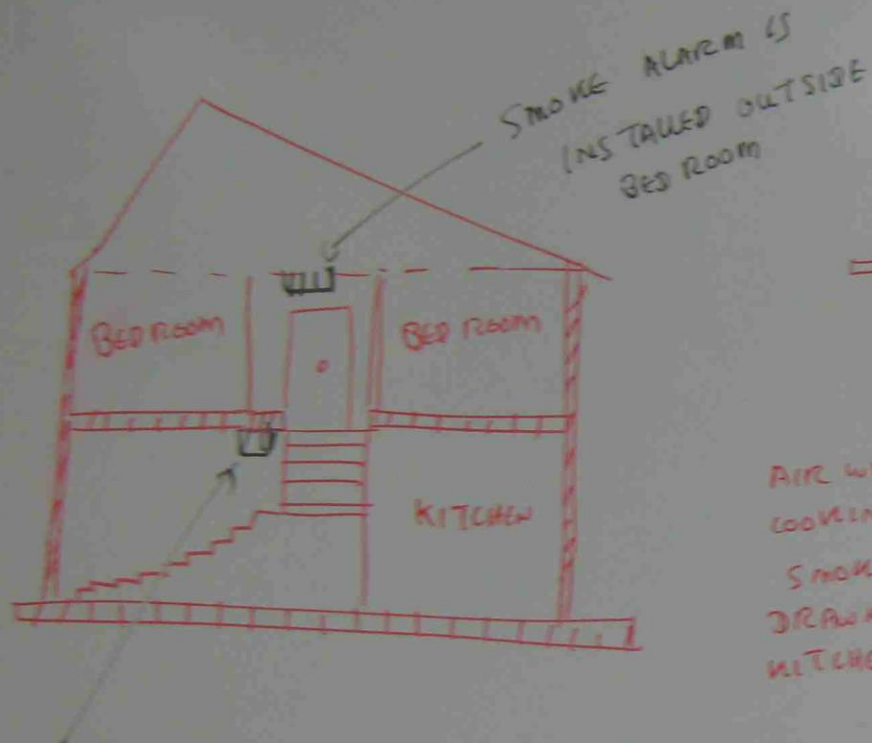
SMOKE ALARM MAY BE

- SUPPLIED WITH THEIR OWN DEDICATED CIRCUIT ORIGINATING AT SWITCH BOARD
- CONNECTED TO A LIGHTING SOURCE
- CONNECTED TO ANOTHER CIRCUIT WHICH IS ENERGIZED 24 HR/DAY

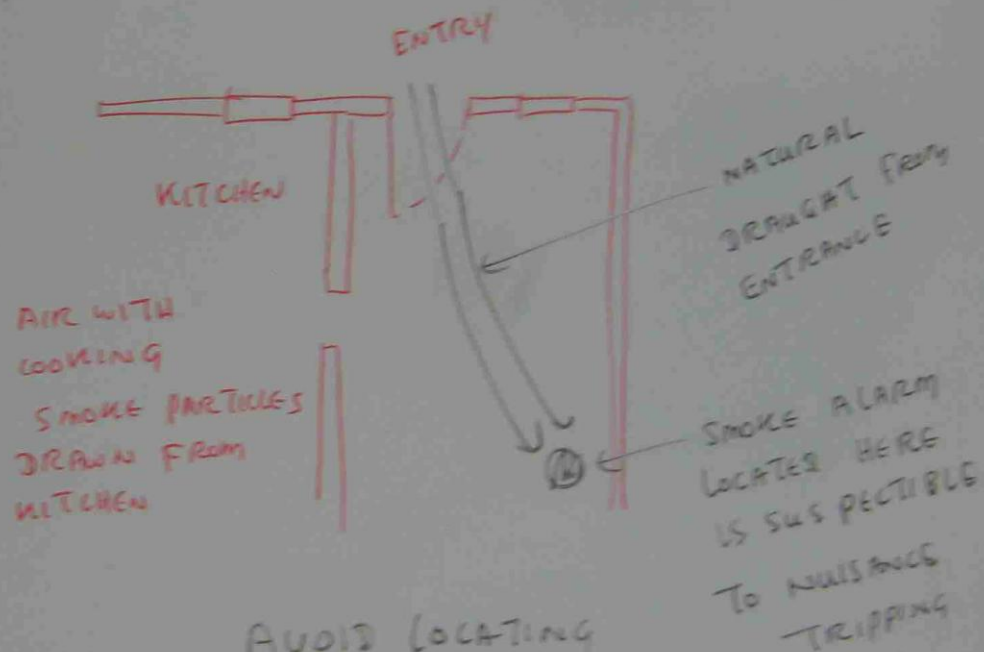
# LOCATION OF SMOKE ALARM (BUILDING DRAWING)



WARNING)



SMOKE ALARM IS INSTALLED AT  
TOP OF STAIRS.



AVOID LOCATING  
SMOKE ALARM IN  
AIR STREAMS WHICH  
MAY CARRY COOKING  
SMOKE PARTICLES.

## WHERE SMOKE ALARMS SHOULD NOT BE INSTALLED

- THE PLACE WHERE ATTRACTS THE COOKING SMOKE
- THE PLACE WHERE STEAM FROM BATH ROOM CAN REACH.
- IN KITCHEN (OR) AIR STREAM PASSING THROUGH KITCHEN
- IN GARAGE WHERE EXHAUST FUMES MAY PRESENT
- NEAR BATH ROOM (OR) VERY HUMID AREA
- WITHIN 3m FROM BATH ROOM
- WITHIN 6.5m FROM GAS HEATER
- NEAR WATER HEATER

## HAZARDOUS AREAS

### Zone E (0)

AN AREA IN WHICH AN EXPLOSIVE GAS ATMOSPHERE IS PRESENT

### Zone E (1)

AN AREA IN WHICH AN EXPLOSIVE GAS ATMOSPHERE IS LIKELY TO OCCUR

### Zone E (2)

AN AREA IN WHICH AN EXPLOSIVE GAS ATMOSPHERE IS NOT LIKELY TO OCCUR IN NORMAL OPERATION

AND IF IT DOES OCCUR, WILL EXIST FOR SHORT PERIOD ONLY

## METHODS OF EXPLOSION PROTECTION

EXCLUSION

EXPLOSION CONTAINMENT

ENERGY LIMITATION

VENTILATION

AVOIDANCE OF IGNITION

## TYPES OF EXPLOSION PROTECTION

DUST EXCLUSION IGNITION PROOF AS 2236 (DIP)

HERMETIC SEALING (EX h)

ENCAPSULATED AS 2431 (EX m)

NON SPARKING AS 2380.9 (EX.m)

OIL IMMERSION (Ex O)

PRESSURISED ENCLOSURE (AS 2380.4) (Ex P)

SAND FILLED (Ex S)

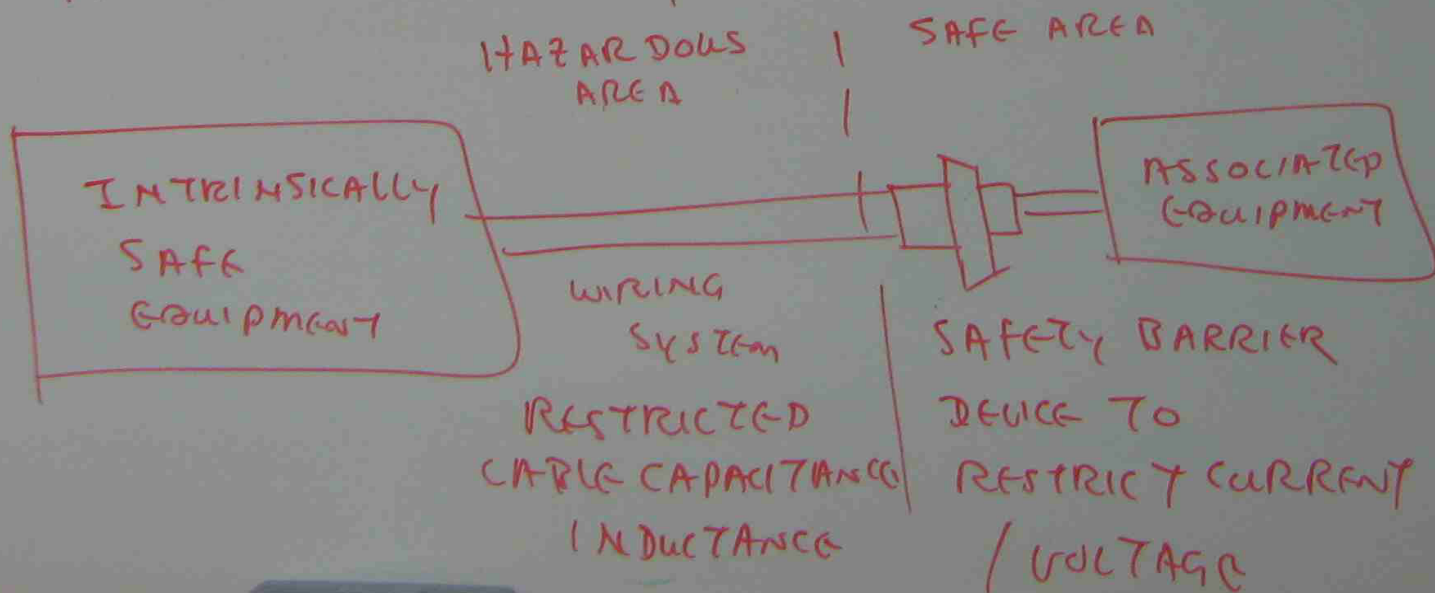
FLAME PROOF ENCLOSURE (AS 2380.2) (Ex d)

VENTILATION AS 1482 (Ex U)

INCREASED SAFETY AS 2380 (Ex e)

SPECIAL PROTECTION AS 1826 (Ex S)

INTRINSIC SAFETY AS 2380.7 (Ex I)



EQUIPMENTS AND WIRING SYSTEM WHICH ARE NOT  
PERMITTED IN HAZARDOUS AREA

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ONLY APPROVED EQUIPMENTS AND INSTALLATIONS ARE PERMITTED IN HAZARDOUS AREA.

THE FOLLOWINGS ARE PROHIBITED

- BATTERY CHARGERS, CONTROL EQUIPMENTS
- LOW PRESSURE VAPOUR DISCHARGE LAMP
- EQUIPMENTS CONTAINING LIQUID DIELECTRICS WITH A FLASH POINT LESS THAN 250°C
- BARE CONDUCTORS
- OPEN WIRING
- EARTH SHEATH RETURN (ESR) WIRING SYSTEM
- CABLE TRUNKING
- BUSWAYS
- AERIAL WIRING SYSTEM

LOW & EXTRA LOW  
TRACK SYSTEM