

1.7 LAYOUT AND EQUIPMENT OF ASH HANDLING SYSTEM

Boilers burning pulverized coal (PC) have dry bottom furnaces. The large ash particles are collected under the furnace in a water-filled ash hopper. Fly ash is collected in dust collectors with either an electrostatic precipitator or a bag house. A PC boiler generates approximately 80% fly ash and 20% bottom ash. Ash must be collected and transported from various points of the plants as shown in Fig.1.7.1. Pyrites, which are the rejects from the pulverizers, are disposed with the bottom ash systems. Three major factors should be considered for ash disposal systems.

1. Plant site
2. Fuel source
3. Environmental regulation

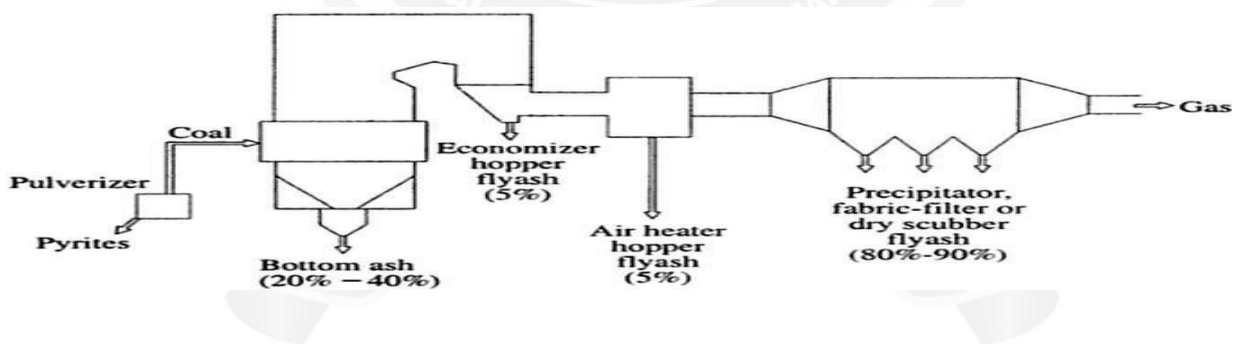


Figure 1.7.1 Ash collection and Transportation

[Source: "power plant Engineering" by Anup Goel ,Laxmikant D.jathar,Siddu :47]

The sluice conveyor system It is the most widely used for bottom ash handling, while the hydraulic vacuum conveyor it is the most frequently used for fly ash

systems.

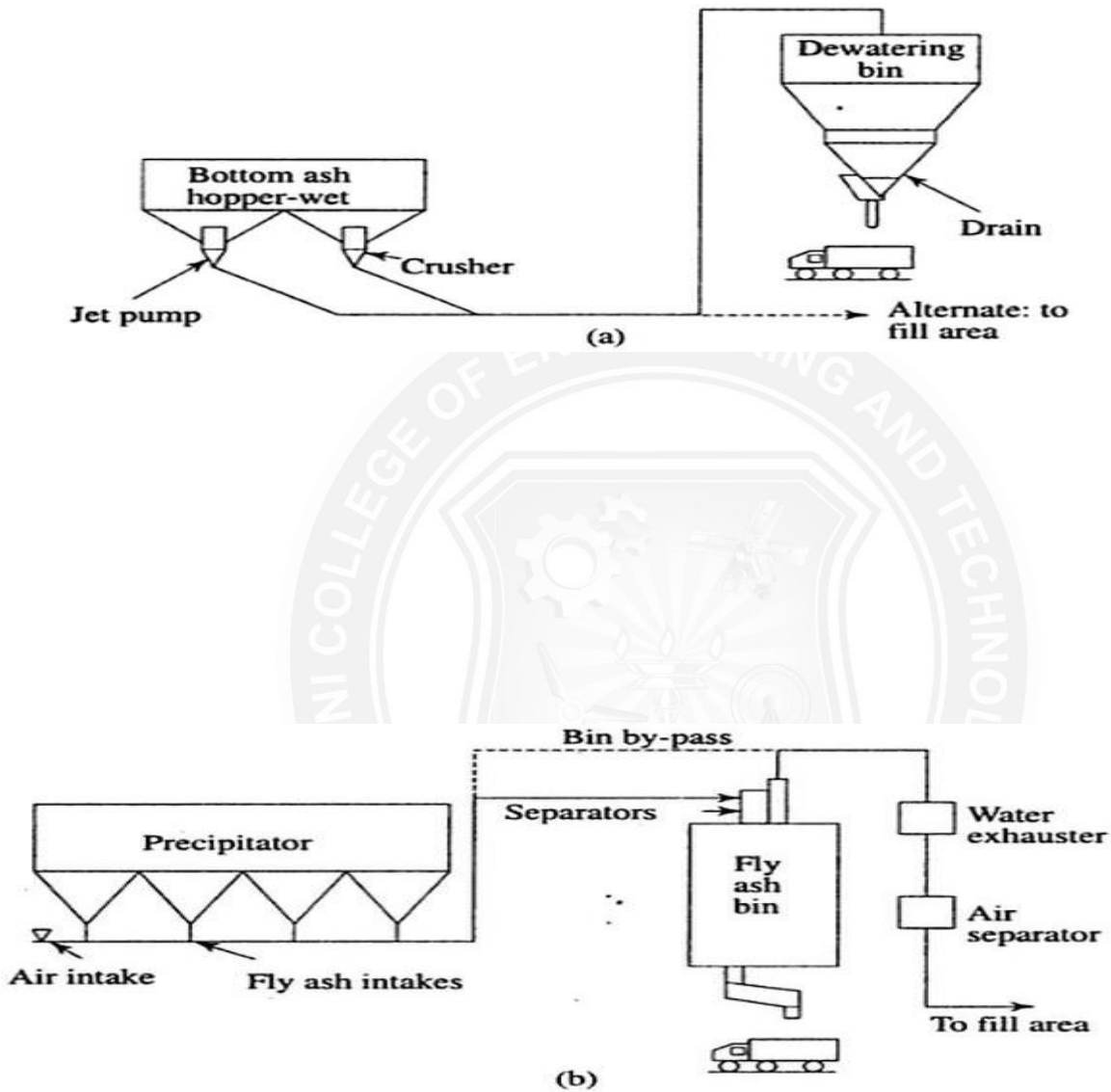


Figure 1.7.2 fly ash hydraulic vacuum conveyor

[Source: "power plant Engineering" by Anup Goel ,Laxmikant D.jathar,Siddu :38]

Bottom ash and slag may be used as filling material for road construction. Fly ash can partly replace cement for making concrete. Bricks can be made with fly ash. These are durable and strong.