The central chip bin 1 is where deliveries of woodchips arrive. The bin can hold 18,000 cubic feet of chips, a supply of about four days when the plant is burning at peak capacity. A ventilation system helps keep the chips dry. From above, large screw conveyors rotate and redistribute the chips evenly throughout the bin. Down below, steel plates on the bin floor are moving slowly, agitating the chips and feeding them onto a conveyor belt 2 located on the other side of the steel wall. Here we can see woodchips carried by the conveyor belt into the screen sorter 3, which insures that chips of the correct size will be accepted. Oversized chips are automatically removed—these larger chips will be stored, resized with a portable chipper, and dumped back into the chip bin. After the chips have been sorted, they continue along the conveyor to a feed augur 4 equipped with metering screws that regulate the how chips are fed into the gasifier system.

In the gasifier 5, woodchips are heated at a very high temperature, until the fuel smolders and emits gas. The wood gas is transferred to the boiler 6, the large green tank below. Here the gas is burned to create high pressure steam which is routed to the Colleges’ existing underground steam pipes and to the cogeneration unit.

The cyclone separator 7 is the first stage of managing waste material resulting from combustion. Large ash particles are separated by the whirling action in the separator and collect in the hopper outside. Finer dust particles pass into the economizer & bag house 8 just behind you. Filter bags, like oversized vacuum bags, are changed regularly to remove the particulate matter.

Some of the steam is routed from the boiler to the cogeneration turbine 9 which converts it to electricity. The turbine produces about 400,000 kWh of electricity per year.