

SEED PROCESSING PLANT ESTABLISHMENT AND LAYOUT

- Seed processing plant is designed based on the characteristics of seed grain and the impurities present in it, which need to be separated. Capacity of plant is known by the capacity of the seed cleaner which is the basic machine in the seed processing plant. Other machines, which work on the principle of separating the material, based on difference in characteristics of good seed and impurities are included in the plant. Capacity of such machines are kept matching with that of cleaner to have effective utilization.

LAYOUT AND PROCESS FLOW OPERATIONS

- raw seed will be fed to the pre-cleaner by elevator (E1). This machine will remove large size undesired materials from the seed. The partially cleaned seed will be fed to the cleaner cum grader with elevator (E2). Here, the small undersized materials including undersized seeds will be separated on the basis of size difference and weight difference. The cleaned and sized seed will be fed to the indented cylinder by elevator (E3) whereby the broken and short seeds will be separated. The graded seed will be fed to the specific gravity separator by elevator (E4) for removing light seed. If it is not required then it will be bypassed. The processed seed will be packed, weighed and stitched with the help of weighing and stitching machine.

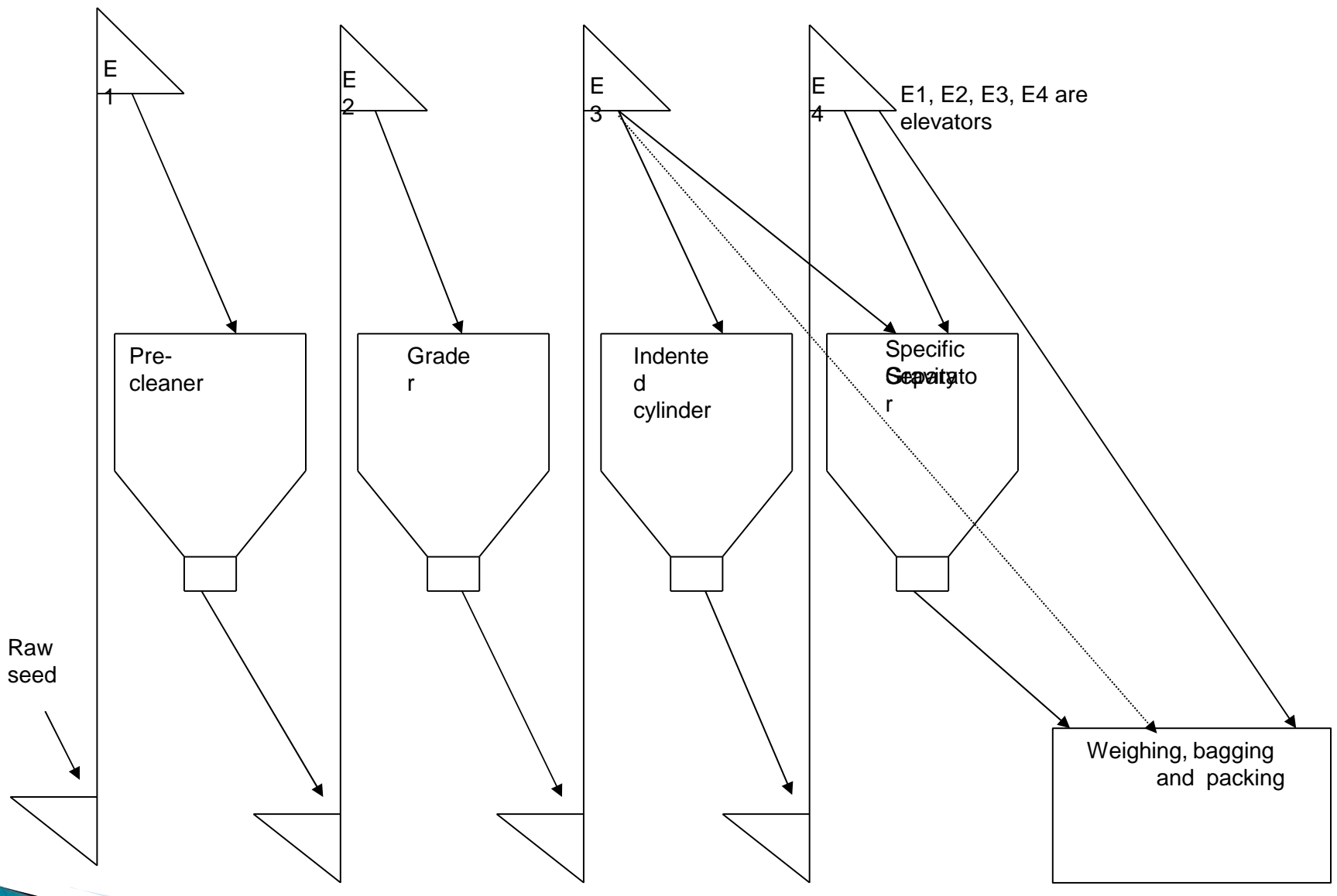


Fig. 4 Layout of seed processing machines

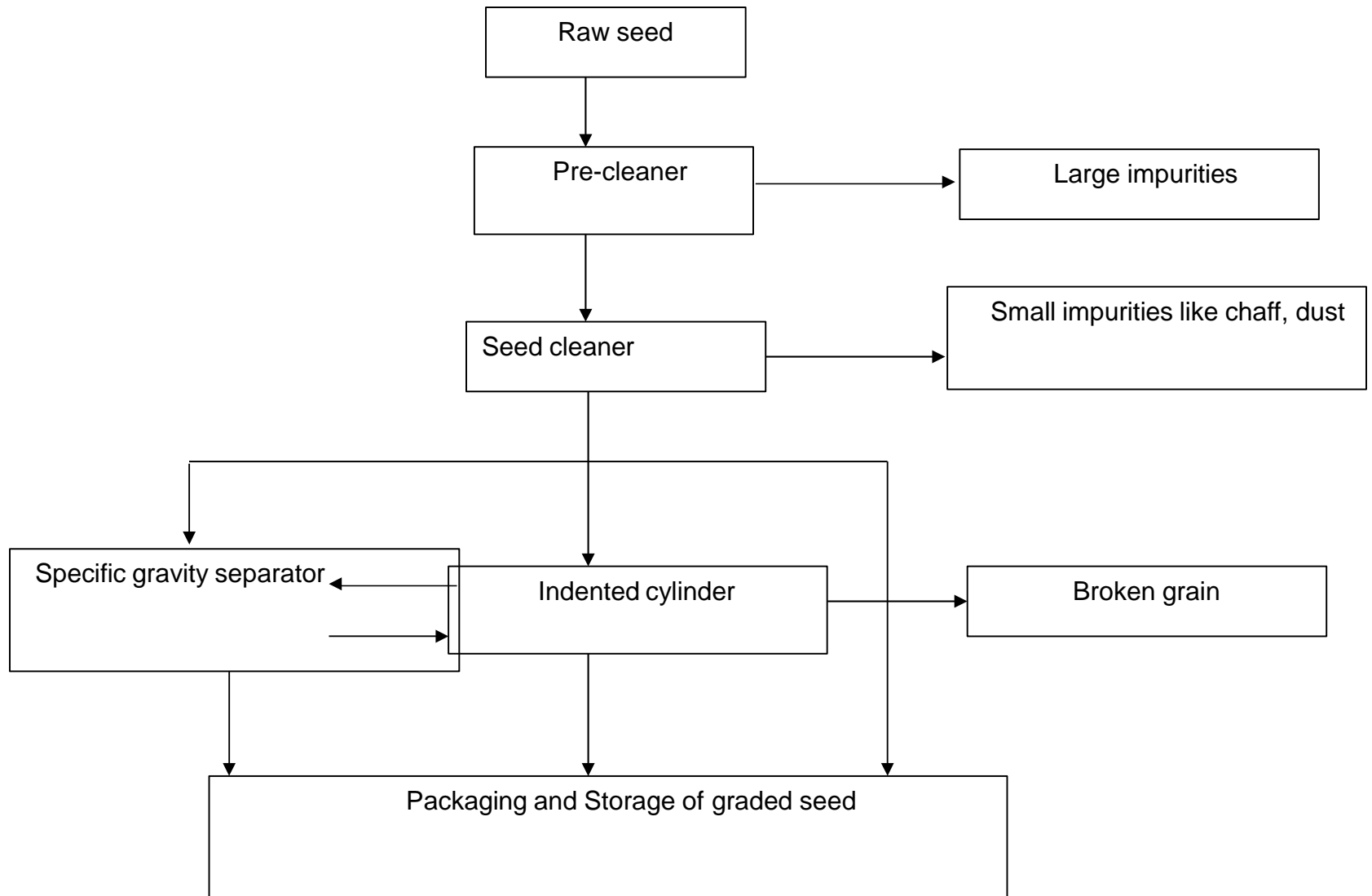


Fig. 5 Process flow chart of paddy seed processing

Seed Processing Plant Building Layout

- Seed processing plant building will comprise of following components:
- Receiving-cum-drying platform
- Processing area
- Auxiliary building

RECEIVING-CUM-DRYING PLATFORM

- An open platform of size 10m x 10m will be provided. The platform will be having a plinth of 0.9 m above the ground level. This area will be utilized to receive the raw seed and to sun dry small lots of crop seeds. This area can also be utilized for storage of seeds on wooden palettes. The platform will be connected to processing shed through a rolling shutter

2 Processing area

- The processing hall will be of size 20 m x 10 m x 6.5 m. Height will be kept to facilitate installation of the seed processing equipment and machinery. A sequence of processing machines to be installed is shown in Fig. 6. Floor of the processing hall will be 0.9 m above the ground level. Roof will be of tubular trusses covered with asbestos sheet.
- The shed will have sufficient provision for natural as well as forced ventilation in order to maintain congenial atmosphere inside the shed. The shed will accommodate seed scalping, seed processing and packaging equipment and will have sufficient

Processing Machines

- **1 Scalper**

- A scalper can be used to rough clean seed when trash content is high.
- The scalper basically consists of a vibrating or rotating screen or sieve. The screen perforations are large enough to allow the rough seed to pass through readily while large inert material is scalped off and removed from the seed lot.

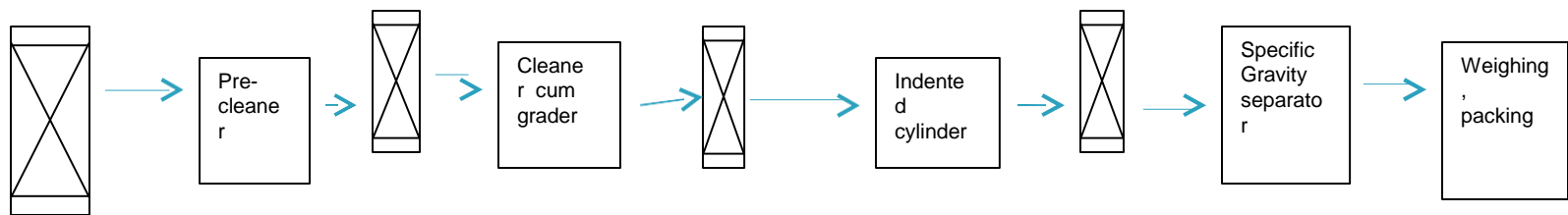
- *2 Air screen cleaner*
- A common air screen cleaner for processing seed uses two air blasts and two screens. The first air system removes dust and light chaff before the seed reaches the first screen. The first screen allows the good seed to drop onto the second screen. The large foreign material rides over the first screen and is discarded. The second screen is a grading screen

- **.3** *Specific gravity separator*
- Seed of same size and general shape can often be separated because they differ in specific gravity. This difference is very useful in removing light immature seed or heavy sand and rocks to improve the purity and germination of crop seed.

- .4 Indented cylinder
- Indented cylinder can do very precise separation by using length difference. The indented cylinder separator is a rotating almost horizontal cylinder with a movable horizontal separating trough mounted inside it.

□ *5 Elevator*

- used for conveying seed from one machine to another machine. It will lift the seed from the ground vertically upward and discharge it from top to the different machines



Sequence of processing machines to be installed in processing hall

3 Auxiliary building

- In addition to building discussed above, a provision will also be made for generator room. The plinth area and cost estimate is indicated in Table 5. Sufficient length of road will be provided to connect various functional buildings with each other and main highway. Internal road will be 3.6 m wide. Boundary wall will be provided all around the complex for security reasons.
- One tube well is available at the site, which will be used for construction works and drinking as well.

- The processing plant building will be constructed as per CPWD/PWD norms. It will have tubular trusses, AC sheets pitched hole roof, cement concrete flooring finished with water-proofing cement paint, aerated, ventilated, rat proof and bird protection. Sealed doors will be provided in these buildings. Buildings will be suitably planned to have interconnection for movement of seeds and materials. Details of requirement of building complex

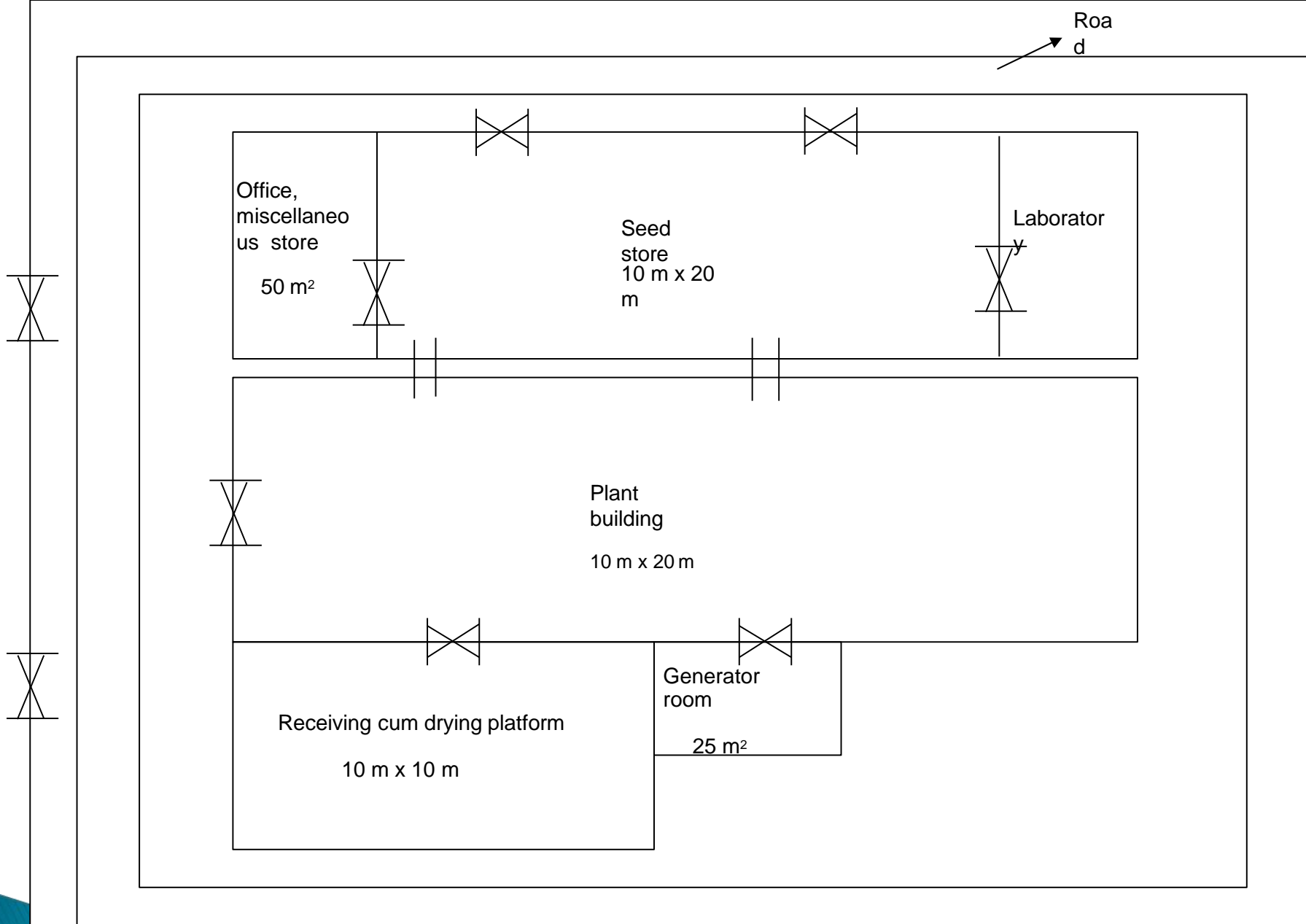


Fig. 7 Building layout plan

THANK YOU