Design of warehousing or horizontal silo

Lorenzo Avalos
Civil Engineer

Proacsa Ingenieria Y Arquitectura Sl.
The concept of Building to store grain has been used for more than 100 years.
In this photo it is seen how in Malaga1952 (now demolished) the wheat was transported by means of suction tubes from the cellars of the ship to the cells of the silo.
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A) Wide surface occupation.

B) Elevated height

C) Demanding fire protection measures
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a.1. Limited space available

a.2. Low quality land to build

a.3. High cost of foundations. (foundations specials)
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b) Elevated height

b.1. Robust constructions Walls of great thickness and bearing capacity.

b.2. Cost of the enclosure (facade) elevated.
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c) Demanding fire protection measures.

   c.1. Support structure of the roof:

   c.1.1. Prefabricated concrete structure

   c.1.2. Metallic structure, coated with fire resistant paint. Lower cost
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   c.2. Cover material:

   c.2.1. Fire resistant sandwich panel PIR (Polyisocyanurate)

   c.2.2. Fire resistant sandwich panel from Rock wool
c) Demanding fire protection measures.

  c.3. Electrical installation:

  Atmosphere with dust in suspension and considered explosive.

  ATEX

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c) Demanding fire protection measures.

c.4. Fire Protection Installation:

Detection system and extinction system using BIES and especially "Sprinklers“, It involves building a water tank.
It is necessary to build a water tank to supply BIE's and sprinkler network
c) Demanding fire protection measures.

c.5. Smoke evacuation system:

c.5.1. Ventilation through automatic opening ventilator.

c.5.2. Ventilation through static aerators. (natural ventilation system)
Static aerators. (natural ventilation system)  
Automatic opening ventilator.
IN CONCLUSION

Analyze the initial investment. High? ...... It is relative

Calculate the maintenance cost .......................very low

Think about the useful life of the Building ....................... 50 years? ............... 75 years? ............... more?

How much does it cost to store a ton of wheat?

If there is land available, it is a very interesting option