

Volume, Area & Capacity V.A.C.

Fundamental for planning

About volume and area

- Understanding of V.A.C.
- Project aspects involved with
- Calculation method
- Approximation / estimation
- Optimization
- Project adjustment

Understanding of V.A.C.

- Volume
 - Three dimensional size of an object
- Area
 - Two dimensional size of an object
- Capacity
 - Three dimensional size of a facility

Project aspects involved with V.A.C.--1

- Building and room size of office area
 - Function, type, owner's opinion
 - Number of occupants
 - Furniture size
 - code
- Size of utility or production space
 - Equipment type and size
 - Operation space requirement
 - code

Project aspects involved with V.A.C.--2

- Storage place
 - Material to be stored
 - Storage method and facility used
 - Equipment used and operation
 - Management
- Transportation area
 - Material and people flow
 - Transportation equipment
 - Operation space
 - Parking area / space

Project aspects involved with V.A.C.--3

- Need of key construction materials
 - Bulk, off-the-the self, fabricated units
 - Characteristics of the materials (physical & chemical)
 - Construction management practice
- Storage area / space for key materials
 - Quantities
 - Management

Project aspects involved with V.A.C.--4

- Excavation and dirt storage
 - Space of basement
 - Building types
 - Code
 - Mounting or piling method
- Construction equipment
 - Excavation and loading
 - Compaction and Grading
 - Drilling and blasting
 - Lifting and erecting
 - Mixing and paving

Calculation method--1

- Regular shape
 - Mathematical equation
 - Density
 - Size of available product
- Irregular shape
 - Breaking down to regular
 - Approximate calculation
 - Density
 - Size of available product

Calculation method--2

- Known size of equipment
- Operation of equipment
 - By standards or literature
 - By equipment instruction
- Know size of special space
 - Activities
 - Experience
 - Code

Approximation / Estimation

- Difficult to measure
- Irregular shape
- Uncertain situations
- Factors that has no documented method

Optimization

- Save cost
- Adjust to material availability
- Satisfy code criteria
- Respect owner's preference
- Follow common sense and practice

Project adjustment

- Scope
- Cost
- Management practice
- Facility plan
- Site plan