Naval Facilities Engineering Systems Command
Southwest

Alternative Construction Methods (ACM)

LCDR Tim Dahms, P.E., CEC, USN
Assistant Operations Officer, NAVFAC SW

September 17, 2025

Poll #1: What is your Industry or Field?

a) Owner (government/military)
b) A/E
c) Supplier
d) Constructor

Poll #2: What is ACM?

a) Aluminum Composite Material
b) Asbestos Containing Material
c) Alternative Construction Methods
d) Association for Computing Machinery
e) Academy of Country Music

Poll #3: What are Alternative Construction Methods?

a) Offsite construction
b) Pre-engineered buildings
c) Kit of parts
d) Standardized designs and processes
e) Advanced IT and automated systems
f) All of the above

Poll #4: Has anyone used or contributed to ACM?

a) Yes
b) No

Why ACM?

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Why Alternative Construction Methods (ACM)

- **NAVFAC/CNIC Joint Letter dated 07 March 2025**
  - **Minimum Viable Project – "a scope that supports the intended mission, no more and no less"**
  - **"ACM is a mandatory cost savings measure that will be employed unless there is a validated justification of the inability to use ACM"**
  - **Faster and hopefully less expensive; time is of the essence**
- **To meet Warfighter and National Security objectives**
  - **Quickly developing new unmanned platforms**
  - **Pacific Deterrence Initiative (PDI)**
  - **Quicker to implement**
  - **Standardized designs**

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Why Alternative Construction Methods (ACM)

- High cost and price levels
- Quality challenges
- Supply chain management
- Poor productivity
- Complex production environment (weather…)
- Worksite safety and site conditions
- Decreasing work force (skilled)

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Pursuing ACM

- Means and methods that deliver the project successfully more quickly and less costly
  - "Understanding the UFC and what UFC is to be recommended for waiving to work with the new technique or method; particularly those yielding greater than $1M or 5 percent project cost"
  - "Criteria related to fire, life safety, health or public building codes, laws, or regulations will not be considered."
- Lean Design Build- performance based DB statements of work
  - "Minimize prescriptive requirements to the maximum extent, by minimizing design and associated bridging documents to maximize the Contractor's flexibility and to encourage innovation."
  - DB to Budget- encourage innovation in support of project affordability

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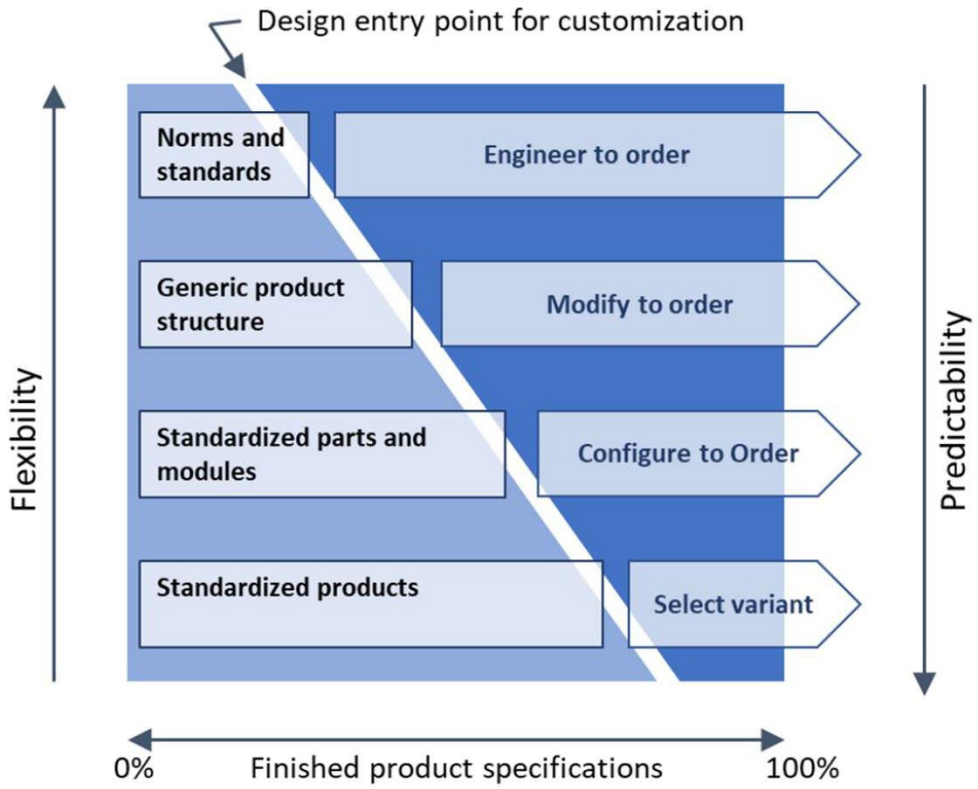
Pursuing ACM

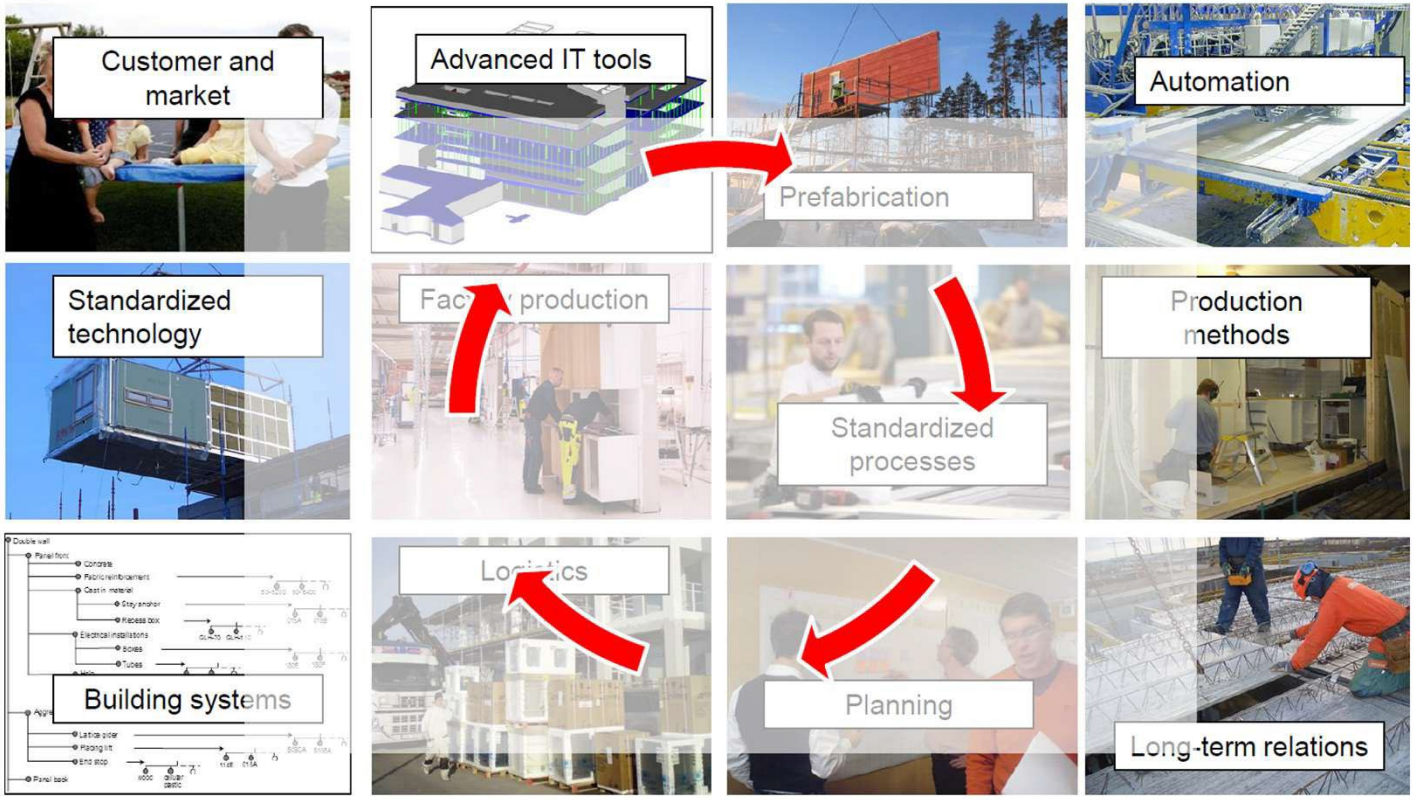


Adapted from Jensen (2010), Hvam (2008)

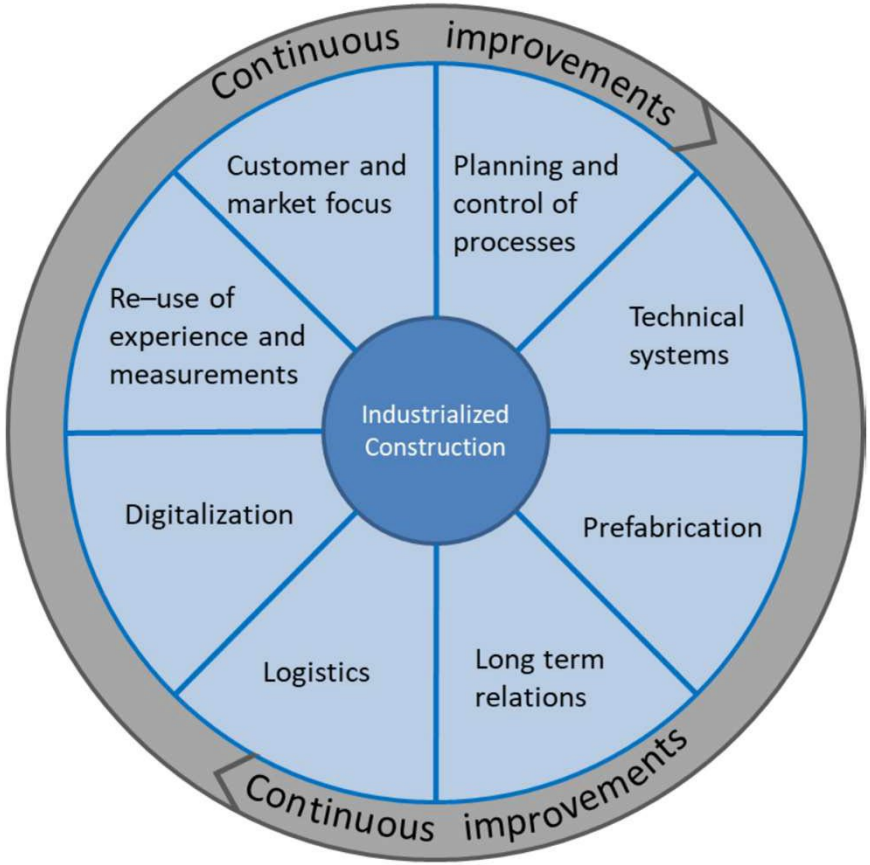
Basic Alternative Construction Methods (ACM)

- ACM ~ to make constructability more efficient and faster
  - Offsite prefabrication
  - Modular Components (kit of parts or volumetric)
  - Tension Fabric Structures (TFS)
  - Pre-engineered metal or fiber reinforced panel buildings

Advanced ACM – Industrialized Construction



Pursuing ACM



Lessing (2006)

Advanced ACM – Industrialized Construction

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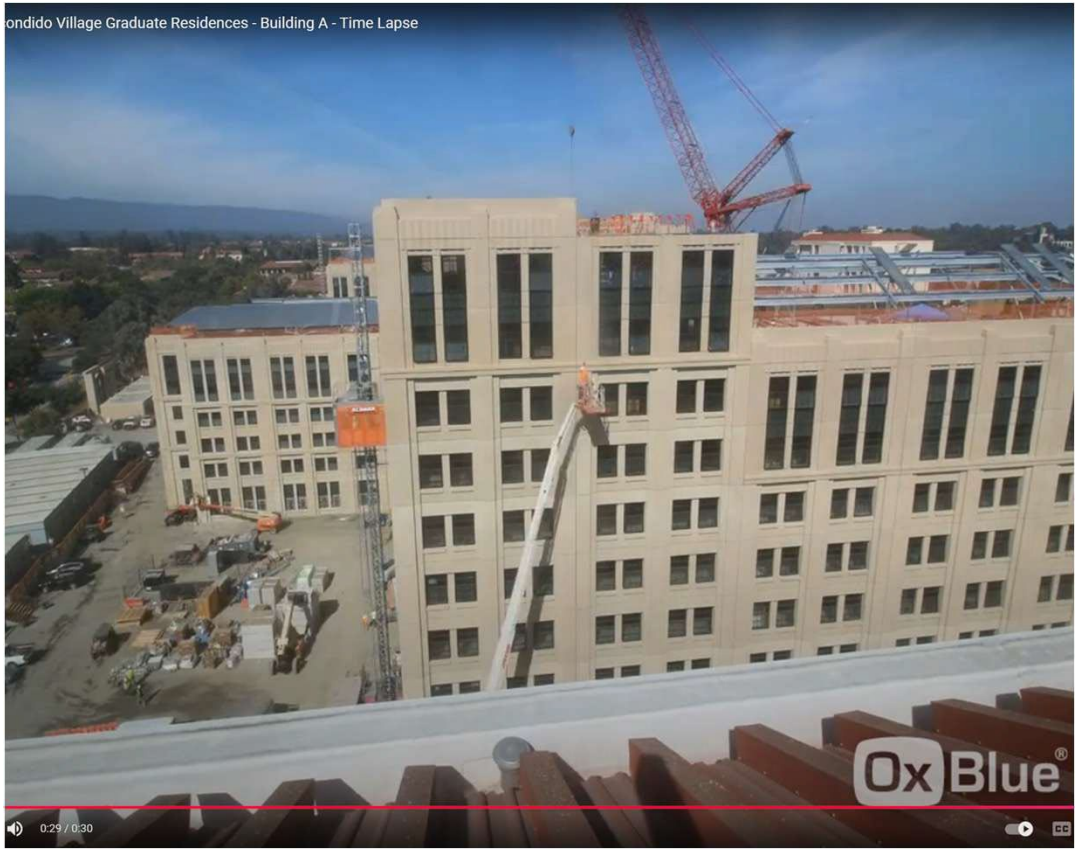
VIDEO

Stanford Escondido Village Graduate Residences

https://www.youtube.com/watch?v=jvRgpjT815A



Aircraft Hangars – Tensile Fabric Structures (TFS)

- Code-Compliant Fabric Adaptive Structures
- Steel frame construction; Wall, roof and door construction of insulated steel panel, insulated fabric, tilt-up concrete or a combination
- Engineered to meet location specific building codes

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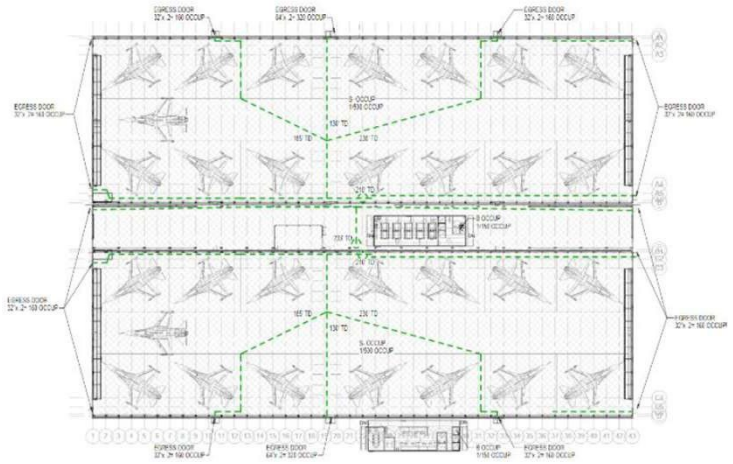
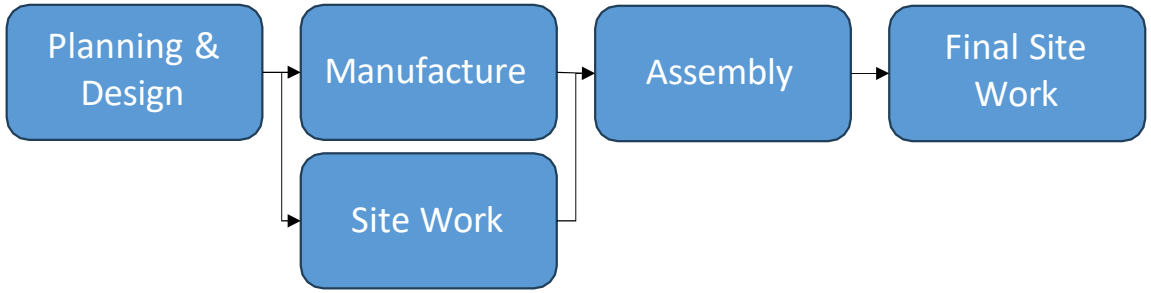
Aircraft Hangars – Pre-engineered Buildings (PEB)

- **Pre-engineered Panelized Modular Relocatable Building (PPRMB)**
  - **Large Vertical Lift Fabric Doors**
  - **Modular base plates and leveling panels**
  - **Plug-and-play electrical and mechanical utility systems**
  - **Center connector corridor with modular admin and facilities**



ACM Hangar Project – NAS Fallon: P429 F35 Hangar

- **Scope**
  - **50,000 SF hangar for four (4) aircraft**
  - **Shop and Maintenance Administration (O1), Operations, Training and Administration (O2) spaces**
  - **ICD-705 compliant secured areas**
  - **Built-in equipment includes mechanical and electrical solutions, 5-Ton bridge cranes, fall arrest system, fire suppression solution, and compressed air system**
- **Acquisition Strategy**
  - **Leverage the DLA Tailored Logistics Support (TLS) Contract for procurement of the PEB Hangar**
  - **Deliver the PEB via DLA with the horizontal work via a Multiple Award Construction Contract (MACC)**



Lessons Learned

Lessons Learned

- **Requirements Definition**
  - Clear definition of Minimum Viable Project (MVP) requirements
  - Identification of ACM scope to determine required supporting facilities and site preparation performance-based requirements (site adaption)
- **Unified Facilities Criteria (UFC) Compliance**
  - Early identification, pursuit, and approval of UFC exemption requests
  - Vendor modifications to Commercial Off the Shelf (COTS) products to comply with mandatory design criterion (modify to order-level 2 of IC)
- **End-User expectation management**
  - Balance functionality over aesthetics
  - Long term operational costs
  - No design changes post design completion

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The Way Ahead

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A Path Forward

- NAVFAC SW has developed an ACM MACC
  - Phase 1 RFQ is out for solicitation NOW!
  - Full and Open competition
  - Incorporates lessons learned
  - Focus on performance specifications
  - Prioritizes use of ACM or other means and methods beyond traditional construction
  - However, if able to provide a faster delivery or lower cost with traditional construction than an ACM solution - we may accept that
  - Technical evaluation factors may be based on:
    - How you plan to improve schedule
    - Experience with delivering with alternative means and methods
    - Cost savings under construction cost limit
    - Meeting UFC or what waivers need processed to achieve cost savings for alternative means

Q & A

timothy.r.dahms.mil@us.navy.mil