

## Engineering Data Fact Sheet

While the project type determines the specific engineering data requirements, typical engineering data needed includes:

- Risk data
- Project-specific design
- Engineering performance information
- Level of protection/impact
- Codes/regulations

Drainage projects Should Include:

- Hydrologic and hydraulic calculations (both pre- and post-project, if available).
- Engineering drawings showing conditions of the flooding areas before and after mitigation.
- Specifics on upstream and downstream impacts
- Sketch/details of the proposed project, including locations, pump and pipe size, and similar details
- Site access plan
- Whether the site is in the FEMA Special Flood Hazard Area (SFHA)
- Any State or local drainage design codes and regulations

Elevation projects should also include:

- Specifics of the proposed mitigation technique
- Sketch and description of existing site and structure conditions, with site maps and photos
- Current and proposed elevation in reference to the base flood elevation (BFE).
- Current local building codes

Experience shows that the following points are importance in building elevations:

- Building condition: Elevation requires a determination by a licensed engineer that the building is structurally sound
- Cost estimates: Get accurate and detailed estimates (multiple bids) from architectural and engineering firms or licensed contractors
- Qualified contractor: Ensure your contractor is experienced with elevation houses. Obtain references



## Engineering Data Fact Sheet Cont.

Ensure that your contractor or architectural and engineering firm is aware of these FEMA resources:

- Foundation Design Manual (FEMA 550), July 2006
- Residential Retrofitting Manual (FEMA 259)
- Selecting Appropriate Mitigation Measure for Floodprone Structures (FEMA 551)
- Home Builder’s Guide to Coastal Construction Technical Fact Sheet Series (FEMA 499)

Wind retrofit projects should include:

- Specifications and drawings of mitigation technique(s) proposed for the building envelope, namely: roof, doors, windows, or other structural openings (e.g., shutters, screens, lamination)
- Building design information (e.g., concrete frame, wood frame, wall)
- If the project is a safe room or community shelter, design compliance with FEMA 320 or 361 respectively
- Level of protection and applicable design wind speed