

Appendix H:
Data Forms and Worksheets

1. 2006 Shelter Retrofit Proposal Submittal Form
2. 2006 Shelter Retrofit List Report Form

2006 SHELTER RETROFIT PROJECT SUBMITTAL
Ref: Section 252.385(3), Florida Statutes

Instructions and Clarifications

1. Please review ARC 4496 (found in Appendix C, 2006 Shelter Retrofit Report) before beginning the project identification process. Note all construction deficiencies with respect to ARC 4496 for individual buildings, and address each deficiency with a corrective action.
2. Prepare an individual Shelter Retrofit Project Submittal form for each individual building being evaluated. DO NOT combine several buildings or a campus onto a single submittal form. An Open Plan building that has a common exterior wall and roof system (building envelope) may be considered a single building. If there are significant differences in construction found in the same building (i.e., major addition constructed to a more wind-resistant design), prepare separate forms and indicate structural separation barrier on a sketch.
3. For entries that provide a multiple choice format, choose the response that is “typical” for the individual building being evaluated. For buildings that have multiple construction materials (or characteristics) and can not be described with a single entry, provide a description (and sketches) of the building. Also assume the weakest materials will be a softspot, and therefore the limiting factor with respect to wind performance.
4. Multiple projects can be submitted for each individual building (e.g., window shuttering, door head and foot bolts, gable-end bracing, generator prewiring, etc.). Please describe the tangible benefits that will be provided by each individual project (e.g., 250 additional shelter spaces if shuttering is performed) and a cost estimate for each individual project.
5. Please note the definition of reinforced and partially reinforced masonry, as defined in Wall Construction Type descriptions, when determining applicable General Construction Type entries. For the purposes of this submittal form, use the following prescriptive definitions:

Partially Reinforced Masonry - For 8-inch hollow concrete masonry units (CMU), the maximum spacing of vertical reinforcement (rebar) at exterior walls shall be 8'-0"; 12" CMU rebar can be extended up to 11'-4". Rebar shall be provided at each side of wall openings, corners and wall-to-wall intersections. An alternative to reinforced cell construction is tie-column (or pilaster) and beam systems. For 8-inch CMU, the maximum spacing between tie-columns shall not exceed 13'-6"; 12-inch CMU tie-columns can be extended to 20'-0". Horizontal reinforcement must be present at roof and floor levels, and above and below wall openings. Interior masonry bearing and/or “core area” walls shall meet the same reinforcement requirements as exterior walls.

Reinforced masonry - Reinforced masonry has the same definition as partially reinforced masonry above, except the maximum spacing of the principal vertical reinforcement can not exceed six (6) times the wall thickness or 4'-0". The presence of tie-columns does not have an effect upon a masonry walls classification as reinforced masonry.
6. For the purposes of this report, standard weight (wgt) concrete will have a minimum density of 100 pounds per cubic foot and minimum compressive strength of 2500 pounds per square inch.

7. These additional limitations shall be applied to 2006 Shelter Retrofit Report projects:
- a) \$200 per shelter space, or
 - b) Up to 5% of the total construction costs in the case of a project that is upgrading the design of new construction to meet enhanced hurricane protection area (EHPA) standards, or
 - c) A maximum of \$300,000 total per project site/campus (excluding generators/electrical work)
 - d) Generators/electrical work shall be considered separately from the \$300,000 limit in item c) above. Generators/electrical work shall also be limited to \$300,000 total per project site/campus. (Thus potentially a limit of \$300,000 in generators/electrical work, plus \$300,000 in other mitigation work, for a combined total limit of \$600,000.)

2006 SHELTER RETROFIT PROJECT SUBMITTAL (ARC 4496 Questionnaire)

County: _____

Latitude: _____ Longitude: _____

Facility Name: _____

Building Number or ID: _____

Address: _____

Current Ownership of Facility: (Public, Private) _____

Is Facility currently used as a high wind shelter? Yes _____ No _____

If answer is No, why? _____

Is the facility located within one mile of the ocean or a large body of water (greater than 1 mile in width or diameter)? Yes _____ No _____

Is the building located on a coastal barrier island? Yes _____ No _____

Storm Surge (SLOSH) Zone that Facility is located within, circle appropriate response:

1* 2 3 4 5 None * includes Tropical Storm

NFIP Flood (FIRM) Zone that Facility is located within, circle appropriate response:

A _____ B C D X V zones will not be considered!

If applicable, is the Facility/Shelter floor elevation above Base Flood Elevation (BFE) and SLOSH Category 4 flood inundation elevation? Yes _____ No _____

What is the finished floor elevation (above mean sea level) of the 1st floor of the bldg? _____ ft

Additional comments concerning flooding issues: _____

Facility Name _____

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FACILITY DESCRIPTION:

Year Built _____, Major Addition(s) _____, _____

Has building been inspected by structural engineer, architect, construction technician, or other knowledgeable building construction inspector? Yes _____ No _____

Are construction drawings (architectural & structural) and specifications available? Yes _____ No _____

Which **wind design standard(s)** was used in the design and construction of this facility?

- SBC or MBMA, Edition 19 _____
- ANSI A58.1-1982
- SFBC, Edition 19 _____
- ASCE 7, Edition 19 _____

General Construction Classification, **check only one response** as appropriate:

Light Steel Frame* _____	Heavy Steel Frame (I or W section) _____
Reinforced Concrete Frame _____	Reinforced Concrete or Tilt-up Wall _____
Fully or Partially Reinforced Masonry _____	Unreinforced Masonry wall-brg _____
Heavy Timber or Glulam Frame _____	Light Metal or Wood Stud wall-brg _____

*includes Preengineered Metal Building (PEMB) Frames.

Exterior Wall Construction, **check only one response** as appropriate:

Reinforced Masonry (Rebar @ 4 ft. o.c. or closer) _____	Light Wood or Metal Stud w/ 1/2 inch or thicker plywood _____
Partially Reinforced Masonry (Rebar @ 8 ft. o.c. or closer) or reinforced pilasters @ 13.5 ft. o.c. _____	Light Wood or Metal Stud w/ light nonplywood sheathing (Includes EIFS) _____
Unreinforced Masonry (exceeds above listed spacings)/Rebar spacing unknown _____	Large Panel Glass or other Glazed Panel or Block System _____
Reinforced Concrete or Precast Concrete Panels (2" min. thickness) _____	Metal Sheets or panels or other Light Architectural Panel Systems _____

Facility Name _____

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FACILITY DESCRIPTION (cont'd):

Do the exterior walls have a brick or stone veneer (3 to 4 inches thick) **or** ½ + thick stucco on metal lath?

Yes _____ No _____

What percentage (to the closest 5 %) of the total exterior wall area is glass? _____ %

Are there portions (softspots) of exterior walls consisting of gypsum wallboard and/or EIFS/vinyl finishes? Yes _____ No _____ If so, what percentage of exterior wall area is composed of this system (use worst-case wall face)? _____%

Are there "storefront", atrium, or clerestory sections of glazing in the exterior walls?

Yes _____ No _____

Are there fixed or operable shutters or other window coverings that will protect windows from large debris impact?

Yes _____ No _____

Roof Construction, **check only one response** as appropriate:

Cast-in-place Reinforced Concrete (standard wgt concrete, 3 inch min.) _____	Plywood on wood or metal joist or truss _____
--	---

Precast Concrete Panels ("T's", "Double T's", Planks, etc.) _____	Wood boards or T & G deck on wood joist or truss _____
---	--

Metal Decking w/ standard wgt concrete (3 inch min.) on metal joist, truss or beam _____	Cement-fiber panels (i.e., "Tectum"-type) on wood or metal joist or truss _____
--	---

Other Metal Decking Systems (insulating concrete and/or rigid insulation or other light coverings) _____	Poured Gypsum on Formboard Decking on wood or metal joist or truss _____
--	--

Roof Geometry, check appropriate response:

Flat or low slope (< 1:12) _____ Gable-end _____ Hip System _____

Shed System _____ Other _____

Is the Roof Slope greater than 30 degrees (6:12)? Yes _____ No _____ N/A _____

Facility Name _____

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FACILITY DESCRIPTION (cont'd):

Does the roof have a long span area (span of greater than 40 ft. between vertical supports)?

Yes _____ No _____

If yes, what is the maximum span? _____

Are Roof Eaves/Overhangs (width greater than 2 ft.) present that connect directly to the roof structure?

Yes _____ No _____ Width of overhang _____

Are appropriate loadpath connections present for the building's construction type? (e.g., hurricane clips and straps for woodframe construction)

Yes _____ No _____

If Parapet(s) are present and roof ponding is a hazard, are emergency overflow scuppers present?

Yes _____ No _____

Are Skylights or other overhead glass or plastic units present?

Yes _____ No _____

Are there any tall structures/trees that are close enough and large enough, that if they fell over, they could strike the building with enough force to significantly breach the roof/walls?

Yes _____ No _____

If yes, describe the tree(s) or structures: _____

Facility Name _____

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FACILITY DESCRIPTION (cont'd):

Describe General Condition of the Building:

Describe other construction features (features that enhance and detract from shelter usage) and/or site specific special hazards (e.g., close proximity debris sources or laydown hazards, etc.) associated with this facility that should be considered by the Division of Emergency Management:

Describe wind or other storm effects damage history of this facility (e.g., severe roof leaks, etc.):

Facility Name _____

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FACILITY DESCRIPTION (cont'd):

NOTE: DO NOT COMPLETE THIS SECTION IF ARC 6564 HAS BEEN

COMPLETED AND ATTACHED TO PROPOSAL!

Which of the following descriptions best describes the food preparation capabilities of this facility?

Full Kitchen _____ Warming Kitchen _____ HomeEc clrm _____ None _____

Which of the following descriptions best describes the food serving capabilities of this facility?

Restaurant _____ Cafeteria _____ Other _____ None _____

Seating Capacity, if known? _____ persons

Are Sanitary Facilities directly accessible from the shelter area(s)?

	Yes	No	Quantity
Toilets	_____	_____	_____
Showers	_____	_____	_____
Potable Water	_____	_____	N/A

Which of the following descriptions best describes the potable water source of this facility?

Public Utility _____ Onsite Well _____ Other _____

Which of the following descriptions best describes the sanitation utility of this facility?

Public Utility _____ Onsite Septic _____ Other _____

Describe normal/daily function and availability of this facility for use as a shelter:

Facility Name _____

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FACILITY DESCRIPTION (cont'd):

SHELTER RETROFIT/MITIGATION PROJECT PROPOSAL:

Describe type of project(s) to be undertaken and what impact it will have upon the shelter characteristics of the facility (e.g., shuttering, generator pre-wiring, roof bracing, etc.); indicate the pre and post retrofit shelter capacity and whether the retrofits will only improve the safety of existing spaces; describe what impact the project will have upon the local and regional shelter deficit situation; provide cost estimates (+/- 15%), source of cost estimates, copies of cost estimate takeoffs if available; and, the time period necessary to complete all projects if construction is performed concurrently. Also provide detailed information on availability of other cost-sharing sources (local or other). Attach additional sheets if necessary.

	Project Description	Impact (safety/capacity)	Cost estimate
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____

Is this project listed in the County's Local Mitigation Strategy? Yes No

If yes, is the project listed by specific building _____, or by campus only _____?

Can the project be completed in a fiscal year [i.e. 12 months]? Yes No

Facility Name _____

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Attachment A

2006 Shelter Retrofit Report
Preliminary Budget Worksheet

Project #1		
Descriptive Title: _____		
Line	Item Description	Cost Estimate
A	Construction Contractual Services	\$
B	Vendor Contractual Services	\$
C	A & E Service Fees	\$
D	Materials	\$
E	Installation/Force Account Labor	\$
F	Permitting & Inspections Fees	\$
G	Packing & Freight	\$
H		\$
I	SUB-TOTAL	\$
J	Contingency (1% Maximum*)	\$
K	TOTAL ESTIMATED PROJECT COST	\$

*-Contingency is limited to 1% unless detailed justification provided.

Project #2		
Descriptive Title: _____		
Line	Item Description	Cost Estimate
A	Construction Contractual Services	\$
B	Vendor Contractual Services	\$
C	A & E Service Fees	\$
D	Materials	\$
E	Installation/Force Account Labor	\$
F	Permitting & Inspections Fees	\$
G	Packing & Freight	\$
H		\$
I	SUB-TOTAL	\$
J	Contingency (1% Maximum*)	\$
K	TOTAL ESTIMATED PROJECT COST	\$

*-Contingency is limited to 1% unless detailed justification provided.

Facility Name _____

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Attachment A

2006 Shelter Retrofit Report
Preliminary Budget Worksheet

Project # _____ Descriptive Title: _____		
Line	Item Description	Cost Estimate
A	Construction Contractual Services	\$
B	Vendor Contractual Services	\$
C	A & E Service Fees	\$
D	Materials	\$
E	Installation/Force Account Labor	\$
F	Permitting & Inspections Fees	\$
G	Packing & Freight	\$
H		\$
I	SUB-TOTAL	\$
J	Contingency (1% Maximum*)	\$
K	TOTAL ESTIMATED PROJECT COST	\$

*-Contingency is limited to 1% unless detailed justification provided.

Project # _____ Descriptive Title: _____		
Line	Item Description	Cost Estimate
A	Construction Contractual Services	\$
B	Vendor Contractual Services	\$
C	A & E Service Fees	\$
D	Materials	\$
E	Installation/Force Account Labor	\$
F	Permitting & Inspections Fees	\$
G	Packing & Freight	\$
H		\$
I	SUB-TOTAL	\$
J	Contingency (1% Maximum*)	\$
K	TOTAL ESTIMATED PROJECT COST	\$

*-Contingency is limited to 1% unless detailed justification provided.

Facility Name _____

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2006 Shelter Retrofit List Report
 Project Priority Worksheet

County: _____

Building Name: _____

Address: _____

	<u>ITEM</u>	<u>MAX POINT</u>	<u>SCORE</u>
1.	Regional Shelter Deficit	(75)	_____
2.	County Shelter Deficit	(50)	_____
3.	Facility Currently Conforms to ARC 4496	(75)	_____
4.	Proposal Will Improve Structural Integrity	(25)	_____
5.	Proposal Will Correct Identified Deficiencies	(25)	_____
6.	Numerical Increase in Shelter Capacity	(75)	_____
7.	Building Ownership and Availability	(50)	_____
8.	Shutters Only Projects _____	(50)	_____
9.	Cost-Effectiveness Considerations	(50)	_____
10.	Proposal Demonstrates Impact Upon Shelter Deficit	(75)	_____
12.	Project Specified in Local Mitigation Strategy	(50)	_____
13.	Project can be completed in a fiscal year [12mnths]? _____	(25)	_____
14.	Is the Building a Designated Special Needs Risk Shelter?	(25)	_____
	TOTAL POINTS	(650)	_____

COMMENTS: _____

1. Proposed project is located within a region with a shelter deficit situation:
(Maximum: 75 points)

Regional shelter deficit 200,000 spaces or greater	(75)	_____
Regional shelter deficit 100,000 to 199,999 spaces	(50)	_____
Regional shelter deficit 99,999 to 10,000 spaces	(25)	_____
No regional shelter space deficit	(0)	_____

2. Proposed project is located within a county with a shelter deficit situation:
(Maximum 50 Points)

County shelter deficit 50,000 spaces or greater	(50)	_____
County shelter deficit 49,999 to 10,000 spaces	(25)	_____
County shelter deficit 9,999 to 1 spaces	(15)	_____
No county shelter space deficit	(0)	_____

3. Current status of facility is demonstrated to conform to ARC4496 guidelines:
(Maximum 75 Points)

A. SLOSH Zone Considerations

Outside Cat 5 evacuation zone	(25)	_____
Inside Cat 4/5 evacuation zone, floor above Cat 4 flood	(15)	_____
Inside Cat 3 evacuation zone, floor above Cat 4 flood	(5)	_____
Inside Cat 3 evacuation zone, floor below Cat 4 flood	(0)	_____

B. NFIP Flood Considerations

FIRM Zones B, C, D, X (15) _____

FIRM Zone A (See Note 1) (0) _____

C. Building Construction

Heavy Construction (25) _____

Moderate Hurricane Resistance (15) _____

Some Hurricane Resistance (5) _____

Light Construction/ Info not available (0) _____

D. Other Considerations(Building Certification, in-place shutters,etc.)

_____ (10) _____

4. Proposed project will serve to improve the structural integrity of the building envelope from wind and/or flood effects?
(Maximum 25 Points)

YES (25) _____

NO (0) _____

5. Facility has been identified for potential use as a hurricane shelter by ARC or other sheltering agency, but is not currently in local inventory due to deficiencies to be corrected by this proposal. Will this project(s) mitigate the identified deficiencies?
(Maximum 25 points)

YES (25) _____

NO (0) _____

6. Numerical increase in shelter capacity due to this retrofit project:
(Maximum 75 Points)

500 or greater additional spaces (75) _____

499-150 additional spaces (50) _____

- | | | | |
|-------|--|------|-------|
| | 149-1 additional spaces | (25) | _____ |
| | No increase in shelter capacity | (0) | _____ |
| 7. | Building ownership and availability for use as a public shelter:
(Maximum 50 Points) | | |
| | Public Facility/ Full Availability | (50) | _____ |
| | Private Facility/ Full Availability | (25) | _____ |
| | Public Facility/ Limited Availability | (15) | _____ |
| | Private Facility/Limited Availability | (0) | _____ |
| 8. | Shutters ONLY Project(s) (Generators/electrical work not considered)
(Maximum 50 Points) | | |
| | Only Shutters (fenestration/door protection/latch) required/listed | (50) | _____ |
| | Shutters and Engineer certifications only required | (25) | _____ |
| | More structural work than shutters/engineer certificates | (0) | _____ |
| 9. | Cost-effectiveness of project(s):
(Maximum 50 Points) | | |
| | \$50 or less per total shelter spaces | (50) | _____ |
| | \$51 to \$75 per total shelter spaces | (25) | _____ |
| | \$76 to \$100 per total shelter spaces | (15) | _____ |
| | In excess of \$100 per total shelter spaces | (0) | _____ |
| 10. | Project proposal has been demonstrated to have a significant impact upon the local,
regional and statewide shelter deficit situation: (Maximum 75 Points) | | |
| <hr/> | | | |
| <hr/> | | | |
| 11. | Project Specified in Local Mitigation Strategy (Maximum 50 Points) | | |
| | Specific Building referenced in LMS | (50) | _____ |

Specific Campus/Complex referenced in LMS (25) _____

No Specific references to project(s) in LMS (0) _____

12. Project can be completed in a fiscal year [i.e. 12 months]?

Yes (25) _____

No (0) _____

13. Is Building a Designated Special Needs Risk Shelter?

Yes (25) _____

No (0) _____