Raised Wood Floor Design & Construction Options



Presented by: Bruce Cordova

Innovative Design Alternative



NAHB Consumer Preference Study

- 42% of consumers prefer wood framed first floors
- 25% prefer concrete slabs





Photos show Habitat for Humanity homes in Gulfport, MS.



Raised Floor Benefits





Champion Homes

"They choose the raised one..."



Billy Ward
 Champion Builders, Port Allen, LA
 President, Baton Rouge HBA



Tilson Homes





"Our focus study revealed that homebuyers in Texas believe a RWF is a custom upgrade...a slab house gives a production builder feel."

- Robert Kennedy, Tilson Homes, Houston, TX



Raised Wood Floor Benefits

- Curb Appeal
- Comfortable Walking Surface
- Classic Style
- Traditional Neighborhood Streetscapes
- Decks & Porches Extend Living Space
- Simplified Future Repairs and Renovations
- Increased Resale Values



"A home should have a top, middle, and a base." – Kevin Harris, Architect



Numerous Advantages



Simple inspections







Easy maintenance & improvements



Builders RWF Cost Assumptions



"I like raised wood floors, but they're \$10,000 - \$15,000 more than slab-on-grade."

– Mike FeiginDesign Tech Homes, Houston, TX



"We only offer raised wood floors because they are more cost effective than slab-on-grade. It's the lowest cost method we can build."

- Lowell Pinnock, United-Bilt Homes, Houston, TX



B.C. Daniels Incorporated



Mobile, AL

APA and CAWS
launched a cost study to
be conducted by NAHB –
Research Center:

- 3 Raised Wood Floors
- ■3 Slab-On-Grade
- 3 Elevated Slabs



The 99K House



Houston, TX

www.the99khouse.com





Jimmy & Rosalynn Carter Build

***** Habitat for Humanity***

Jimmy & Rosalynn Carter Work Project GULF COAST 2008









Cows choose Raised Wood Floors





Top 3 Federal Flood Disasters Before Katrina/Rita

Storm	Date	Payout	Claims
TS Allison	6/2001	\$1.1 billion	30,274
H. Ivan	9/2004	\$1 billion	24,440
May 8-9 flood	5/1995	\$584 million	31,264





Katrina/Rita/Ike



Hurricane Ike Kemah - 2008



Flood Resistant Construction

In areas prone to flooding, use methods and practices that minimize flood damage





Flood Openings?













Elevated, Filled Slab







Raised Perimeter Stem Wall Slab on Compacted Fill





Pier-and-Beam Foundations



Champion Homes Port Allen, LA





Continuous Foundation Footing Incorporating Decorative Lattice Panels



Costs Comparison Slab \$6.60-\$7.50

Piers \$190 each - \$3

Lumber with 3/4" SIF

2x10 - \$1.25

2x12 - \$1.50



Costs
Labor \$.65- \$1.00
Fill
\$80-\$100 load
1'-\$.75
2'-\$1.50
3'-\$2.25



Moisture & Insulation Study

Study in conjunction with LSU, APA, FPL, & SFPA. Insulation types in study:

- Fiberglass batt
- •Rigid faced foam board (taped)
- Low-density spray foam
- •Medium-density spray foam
- High-density spray foam





Motivation

- "What's the best way to insulate a crawlspace?"
- Many opinions but lack of research
- Need for durable, energy-efficient housing
- Moisture control/durability are essential



Experimental Houses

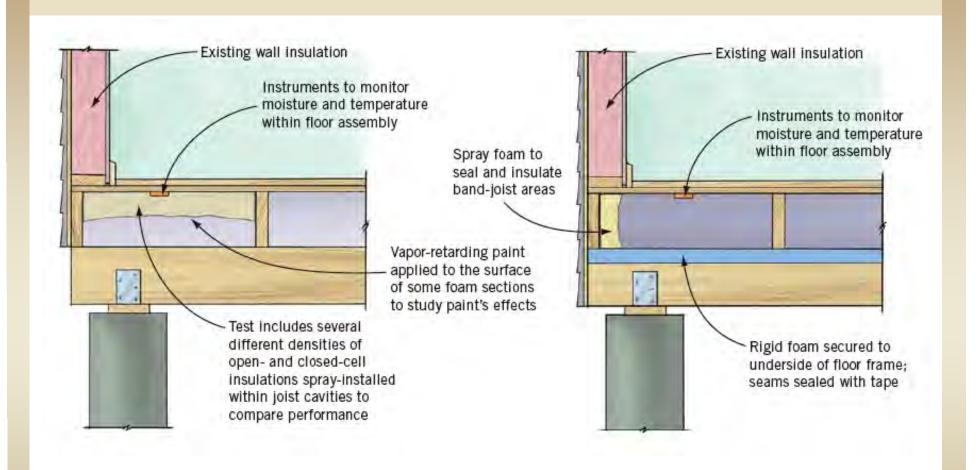
- 12 total
 - 8 in Musicians' Village
 - 4 in Baton Rouge







Insulation Systems







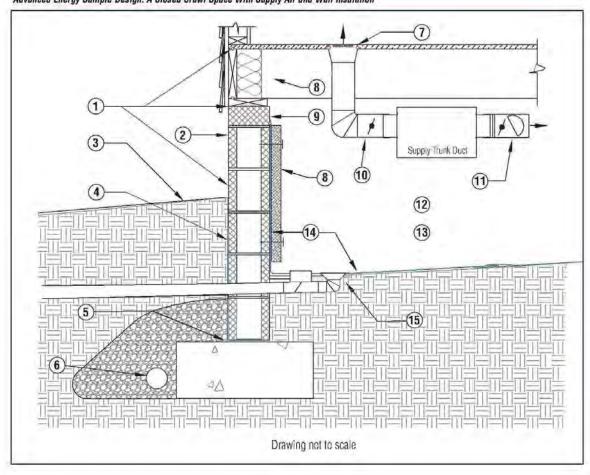
Instrumentation





Closed Crawl Space Example

Advanced Energy Sample Design: A Closed Crawl Space With Supply Air and Wall Insulation





Extend Vapor Retarder Up Wall





Concrete Slab Repair Unit Costs

Contractor	Ext Pier	Int Pier	Deck	Concrete	Mud
			Removal	Breakout	Pumping to
					2 to 4 in lift
Α	\$225 -	\$325 - \$350	\$250 - \$350	\$35 - \$45	\$1900
Montgomery Co.	\$250				
В	\$400-	\$650	Varies ~\$150	\$125	
Harris Co.	600		per pier		
С	\$595	\$655	NC	NC	\$500 - \$800
Harris Co.					

"Repair of slab-on-grade foundations can be very expensive." John Clark, PE



Raised Wood Floor Repair Costs

Contractor	Est. Cost to Shim Piers for RWF		
Α	\$2.35/ft ² with min. of \$1200 to \$1900		
В	\$125 per pier		
	\$3.00/ft ² with min. of \$2000.		
	Typical range in Houston reported to be \$2.50 to \$3.50/ ft ²		
С			

"With a raised wood floor, repairs are much lower since individual piers or beams may be adjusted by direct access." John Clark, PE



Raised Wood Floors on Expansive Soils Research

- Research Expansive Clay Soils (Houston)
 - Engineered Foundations
 - Monitor Movement

Ronny Carroll Homes Houston, TX



www.RaisedFloorLiving.com



Thanks for Attending

