

Home Electrification Planning & Design

Common Challenges & Getting to Solutions



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Image via Needpix.com

OUTLINE

- A.** The Typical Project
- B.** Challenges
- C.** Getting to Solutions One Project at a Time
- D.** Getting to Solutions Across the Industry

THE TYPICAL PROJECT

(a short subject)

THIS is Typical: 1-800-Fix-My-House

- DECARBONIZE
- IMPROVE RESILIENCY
 - Power outages
 - Wildfires
- OH, AND ...



Which means: there IS no “typical project!”
Instead, lots of **VARIABLES!**

CHALLENGES

(a somewhat longer subject)

Challenges: the Boring Obvious Ones



1. What people want
2. What they can afford
3. Electrical panel constraints
4. Utility companies
5. Supply shortages
6. A very busy industry

Now for the *interesting* challenges ...

Challenge #1: Do It Right ... or Not?!

The Loading Order—

1. Improve efficiency

THEN

2. Electrify

WHY DOES THIS MATTER?

- A. Electricity rates are high, so even with high-efficiency equipment costs may go up
- B. You don't want to oversize new HVAC systems (save money, save energy)
- C. Comfort & expectations
- D. Happy customers matter!

Challenge #2: Variable Vintage(s)

- Electrical service
- Building codes in effect at the time
- Changes made over time

What if you wanted to put an electric range here?



Challenge #3: Variable Condition

- Construction quality
- Design quality
- Deferred maintenance issues

QUIZ:
What is
this?

QUIZ: Can you
find the
footing?



Challenge #4: Variable Configuration

- Attics

QUIZ: which
is the attic --
THIS?

or
THIS?



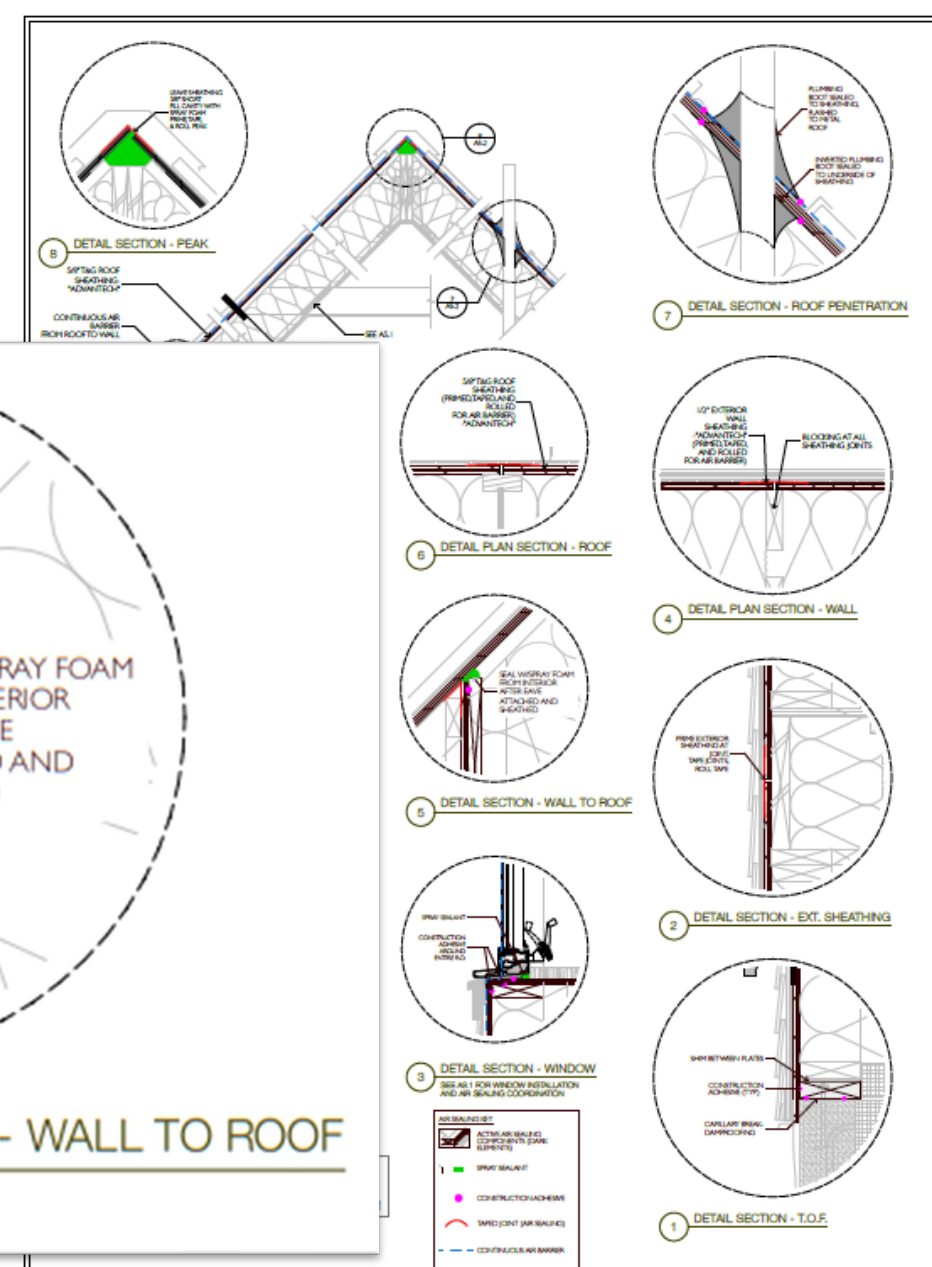
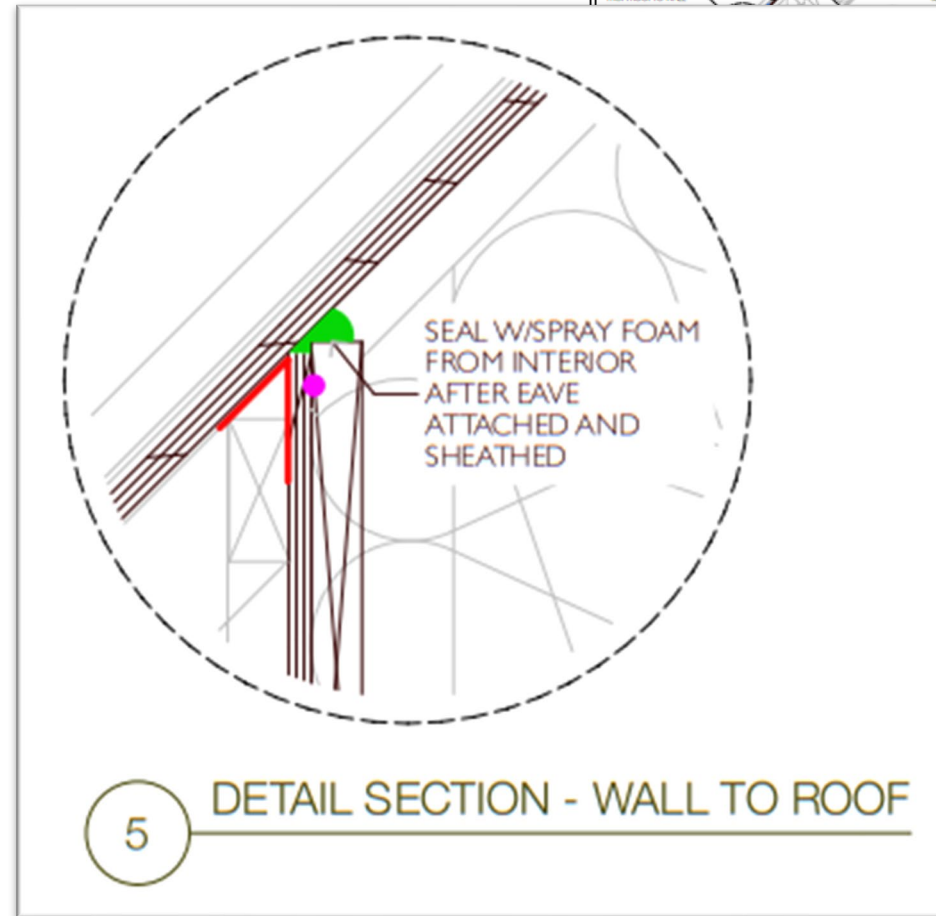
Challenge #4: Variable Configuration

- Attics
- Crawl spaces



Challenge #4: Variable Configuration

- Attics
- Crawl spaces
- Continuity of air + moisture + thermal barriers ... *or NOT!!???*



Challenge #5: Doing It Right ...

TAKES LOTS OF:

- Skills
- People
- Coordination
- Time
- **MONEY**



Challenge #6: Being Sure You've Heard from *all* the decision-makers!



Challenge #6: Being Sure You've Heard from *all* the decision-makers!

[SIX MONTHS LATER ...]

But did I
mention ...
???!?



Challenge #7: Limited Solution Providers – electrification-savvy building professionals



Challenge #8: There Is No Typical Project!

... and we need to get past that



GETTING TO SOLUTIONS
one project at a time

IN PRINCIPLE, this is (relatively) straightforward

1. Be clear about expectations and tolerances:

- Time/schedule
- Complexity
- Budget

2. Hand pick known, competent solution providers

3. Set expectations:



CLIENTS

**SOLUTION
PROVIDERS**

4. Track team communications until the work is finished

GETTING TO SOLUTIONS
across the industry

Solution #1: Educate *LOTS* of Solution Providers



Solution #2: SIMPLIFY—Develop “70% Packages”

1. Now there are no typical projects *but*—
 - Custom projects will give way to mass need
 - We need economies of scale
 - We need speed
2. Cover ENCLOSURE + ELECTRIFICATION *plus*
 - Low-Amp options
 - Solar where feasible

The image shows a checklist titled "Checklist | Customer Service" with a green header. The checklist is organized into four main sections, each with a list of tasks and a corresponding table with columns for "Yes", "No", and "Notes".

Tasks	Yes	No	Notes
Vision and Strategy			
Assess customer needs and understand what customers want			
Create a customer service vision and communicate the customer service vision to employees			
Identify all customer touchpoints			
Identify customer service KPIs to monitor			
Team			
Hire the right employees with a natural ability to possess the skill set to help support a strong customer service environment			
Set goals for customer service satisfaction			
Regularly train team to provide excellent customer service skills			
Acknowledge and reward team members that apply good customer service and have a system to monitor and apply			
Hold people accountable when customer service standards are not being met			
Standards of Service			
Create company standards of service and communicate to all employees. I.e. How to deal with customer complaints			
How to be responsive to customers			
How to meet customer service needs			
When to perform service recovery			
How to answer the phone etc			
Systems and Monitoring			
Create a consistent feedback loop			
Provide easy ways for customers to provide feedback			
Respond to all customers feedback			
Utilize online feedback systems such as Google reviews			
Signature Witness: _____ Date: _____			

Solution #3: Reduce Purchase Friction

1. Encourage preemptive replacement

- Educate about appliance lifespan*



ITEM	YEARS
FURNACE	15 – 25
AIR CONDITIONER	7 – 15
WATER HEATER	6 – 12
DRYER	13

2. CCAs, utilities, regional agencies: create BULK BUY & warehousing programs

- Intake purchase & electrification requests
- Refer leads to installation trades

3. Offer 0% financing to low-income households

* Source: International Association of Certified Home Inspectors, <https://www.nachi.org/life-expectancy.htm>

Look up appliance age at <http://www.appliance411.com/service/date-code.php> OR <https://www.building-center.org/>

Thank you!



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- Integrated design & delivery facilitation
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