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Market Impact of the ASHRAE Advanced Energy Design Guides

Presentation of Final Results

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Research objectives

- **Determine the market impact of the AEDG series, including awareness, usage, and energy savings impacts.**
- **Understand the market impact of other whole-building design resources as compared with the ASHRAE guides.**
- **Obtain insight about potential improvements in the content, format, delivery method, and other aspects of the AEDGs to maximize their effectiveness.**

Presentation of results

- **Energy impact estimates**
- **How the guides are being used**
- **Comparative awareness/use of AEDGs**
- **Barriers to AEDG use**
- **Suggestions for improvement**

Research tasks

- **716 ASHRAE members participated in an online survey of AEDG awareness and use**
- **54 AEDG users participated in telephone interviews that elicited detailed information about how the guides are used and suggestions for improvement**
- **Secondary market analysis explored alternative approaches for distributing and promoting the AEDGs in order to increase market awareness and use**

Member survey response rate

Sample Group	Surveys Sent	Unable to Contact	Responses	Response Rate
Members	1000	144	138	16%
Targeted job/firm	2500	215	423	19%
Downloaders	750	75	155	23%
TOTAL	4250	434	716	19%

Technical interview recruitment

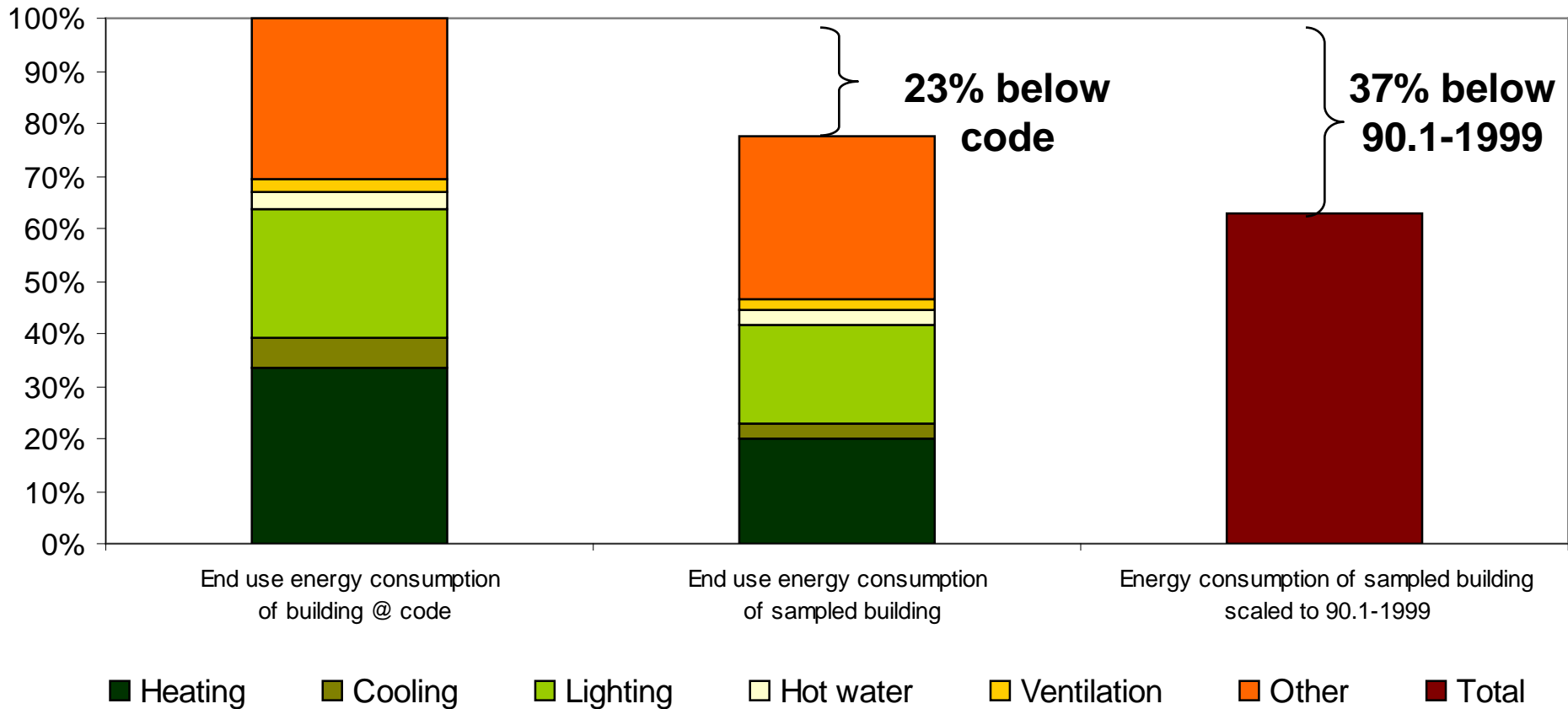
- **Multi-mode approach:**
 - **9 survey respondents agreed to participate in follow up interview**
 - **14 participants recruited through cold calls**
 - **31 participants recruited through email solicitations**

Energy impact analysis

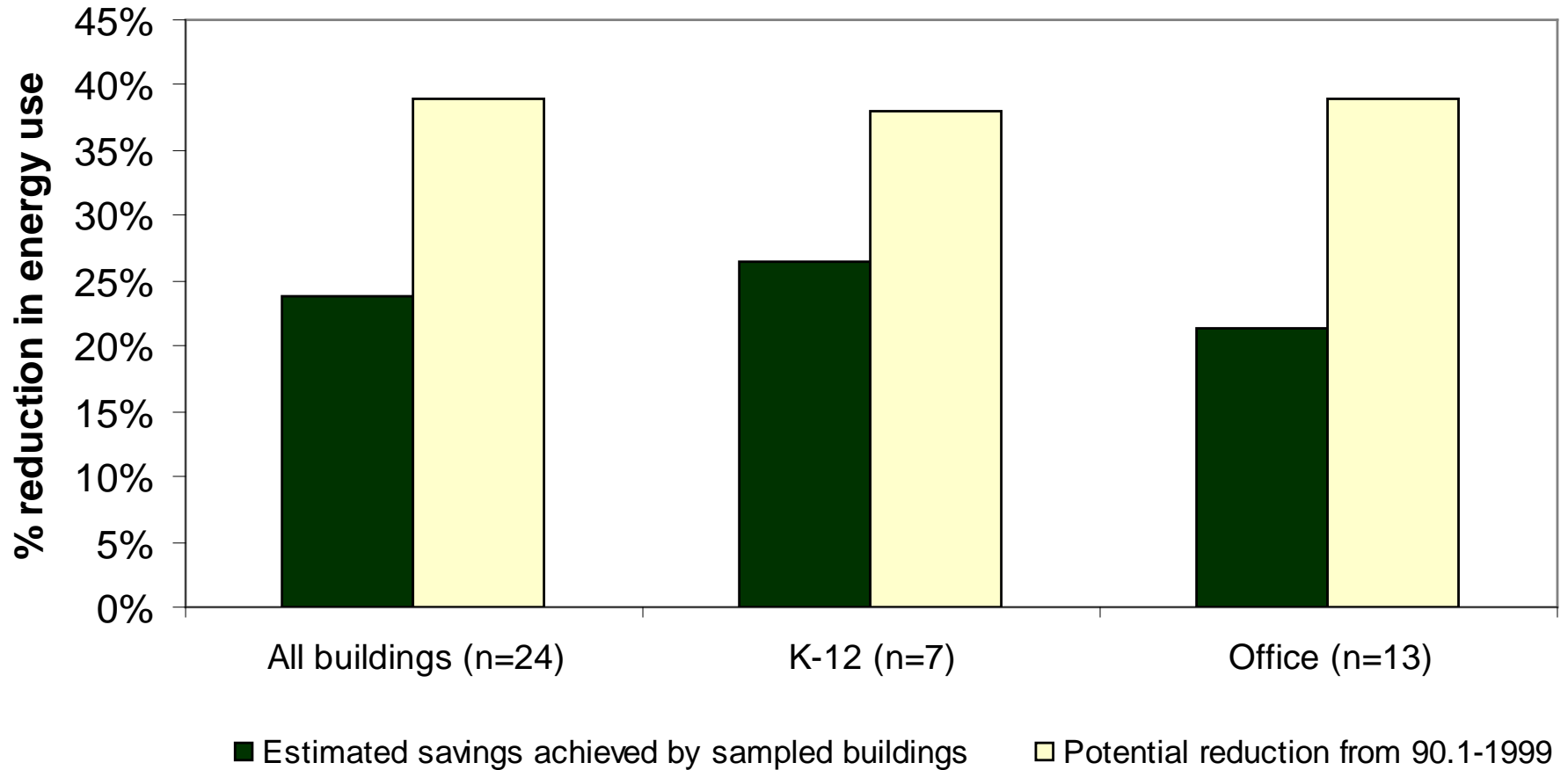
Market	Projects Used for Energy Impact Estimates
Office	13
K-12	8
Retail	3
Warehouse/self-storage	1
TOTAL	25

Energy impact analysis approach

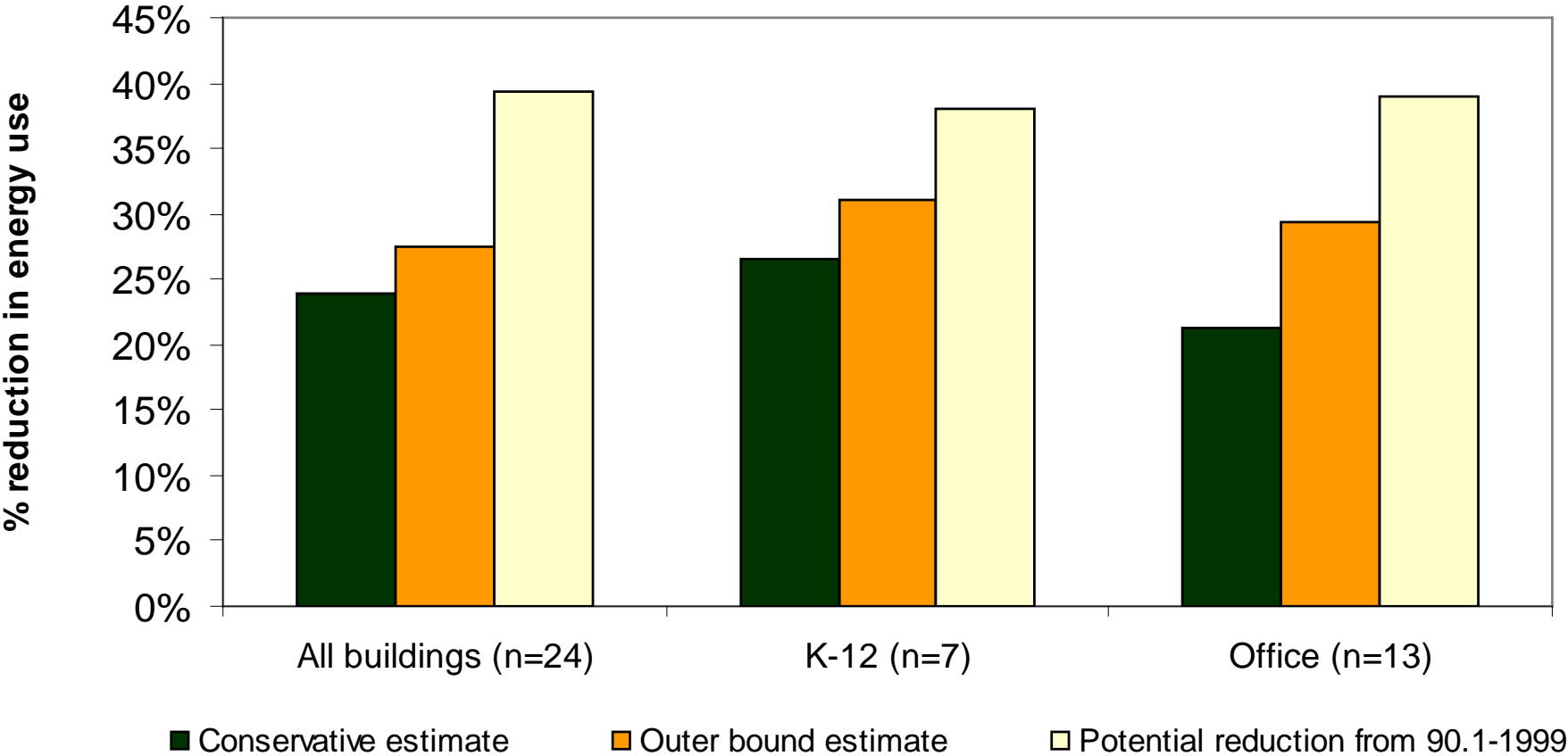
Example: K-12 school in Climate Zone 5



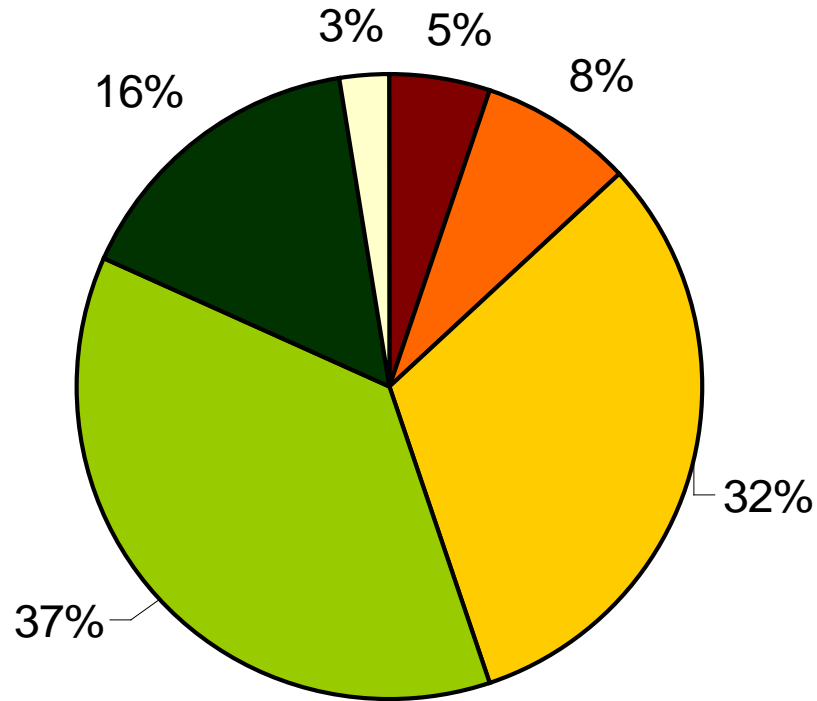
Energy savings impact in sampled buildings



Outer-bound energy savings estimate



AEDG influence



■ 1-1.99

■ 2-2.99

■ 3-3.99

■ 4-4.99

■ 5

■ no response

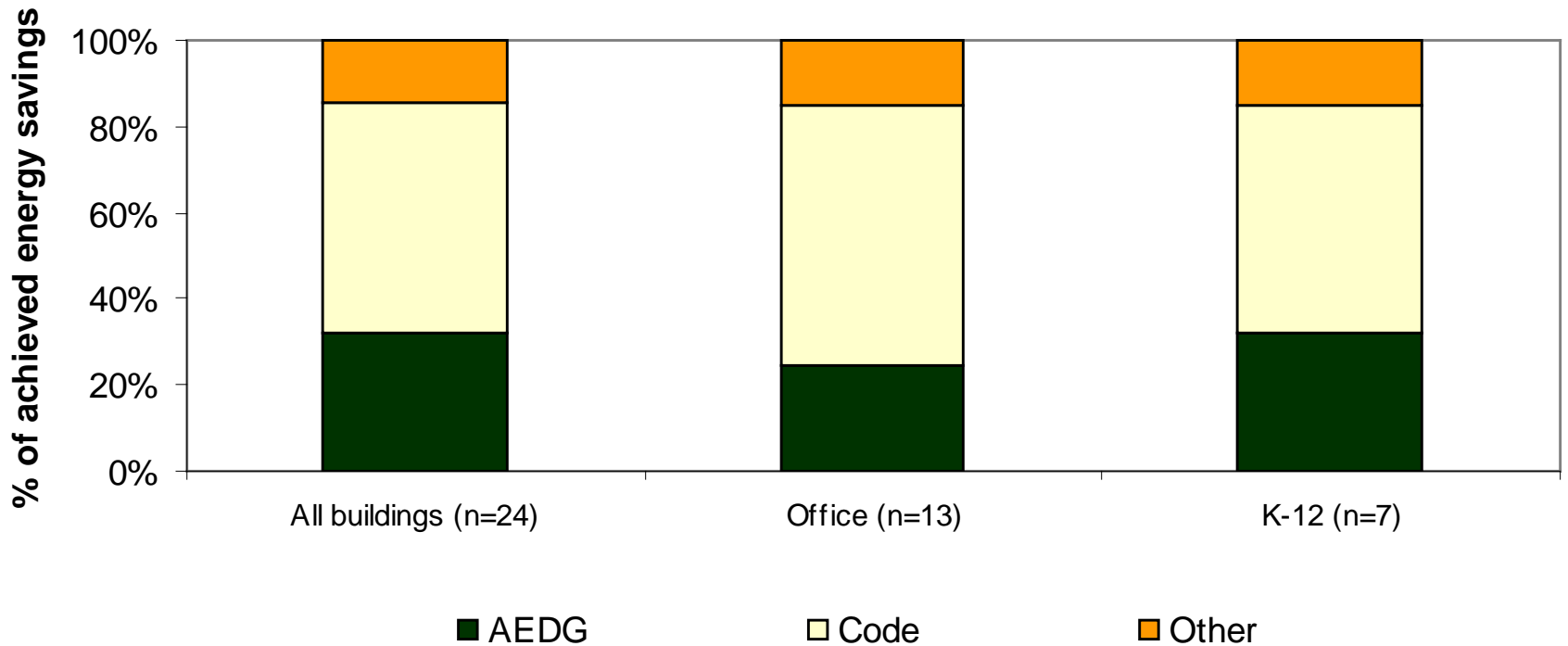
Not important

Very important

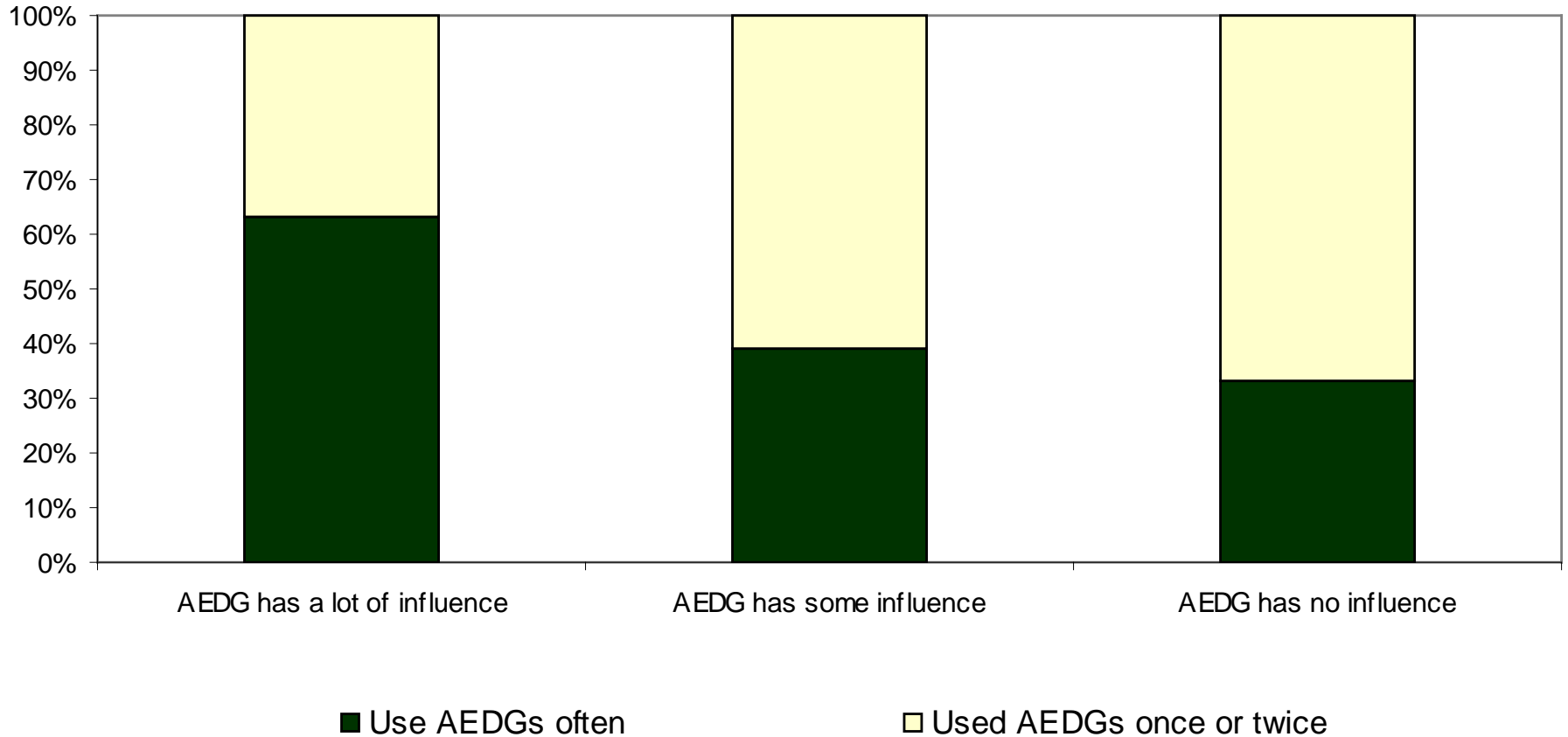


n=39

Energy savings attribution

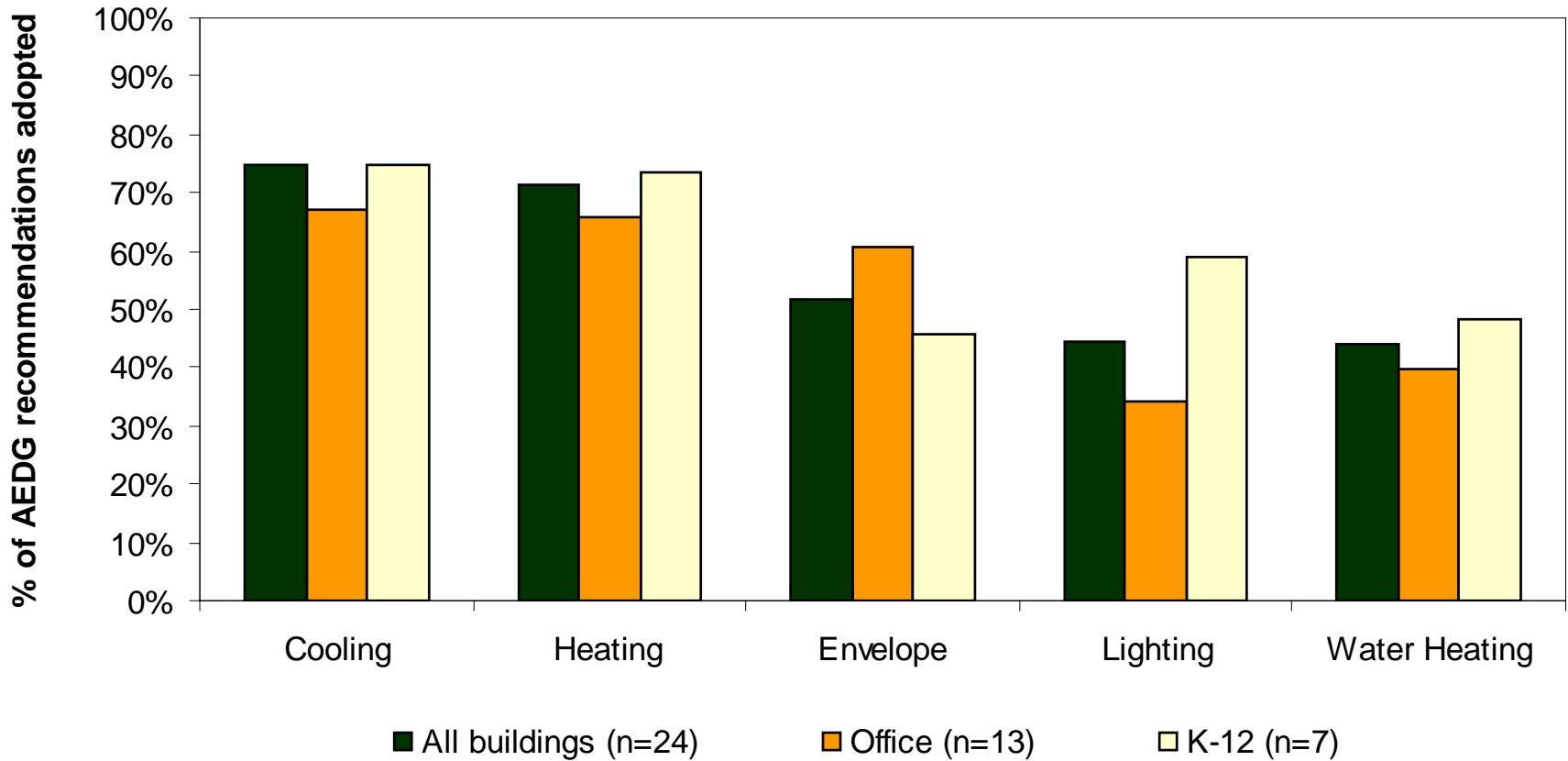


AEDG influence

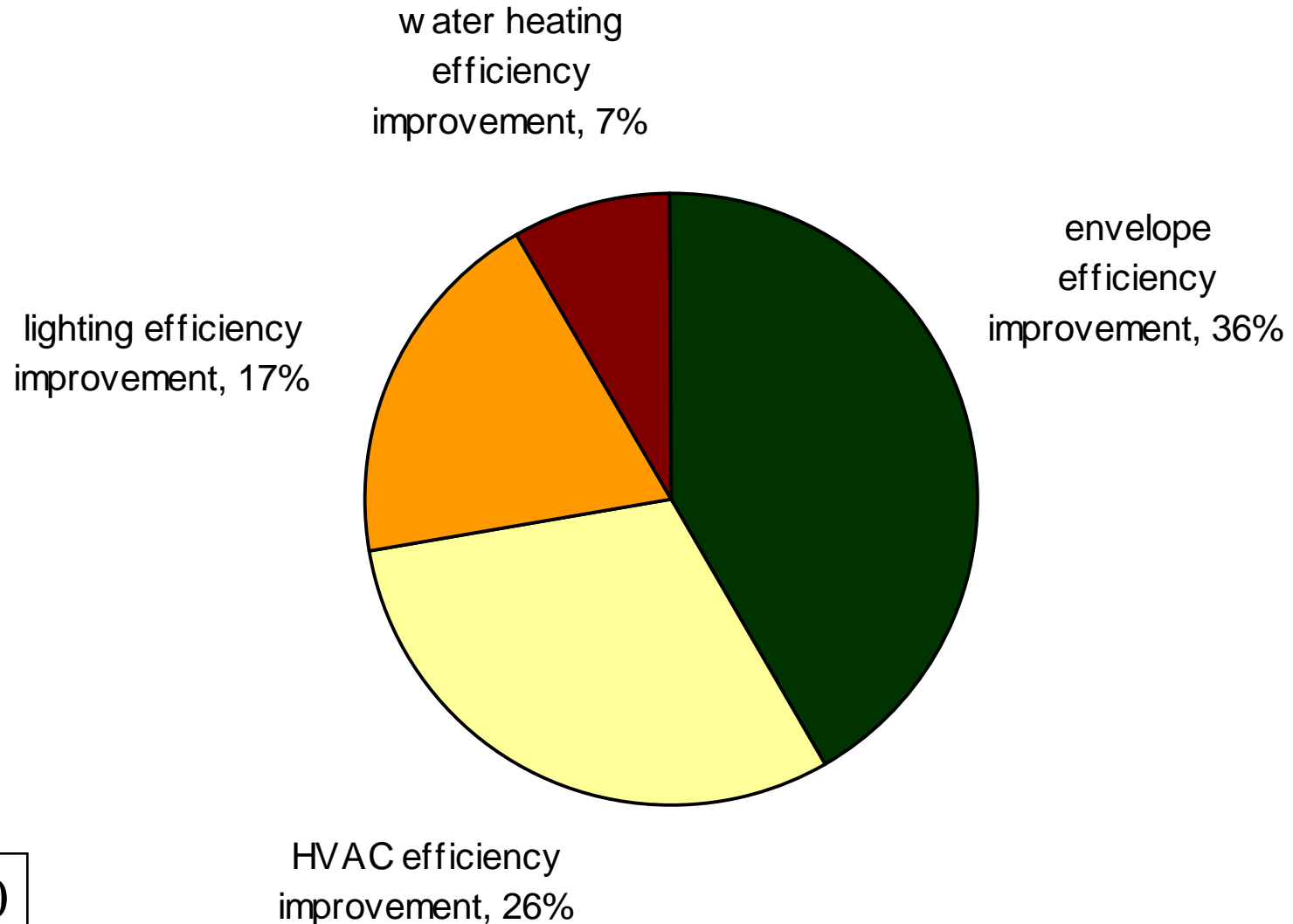


n=175

Implementation of AEDG recommendations

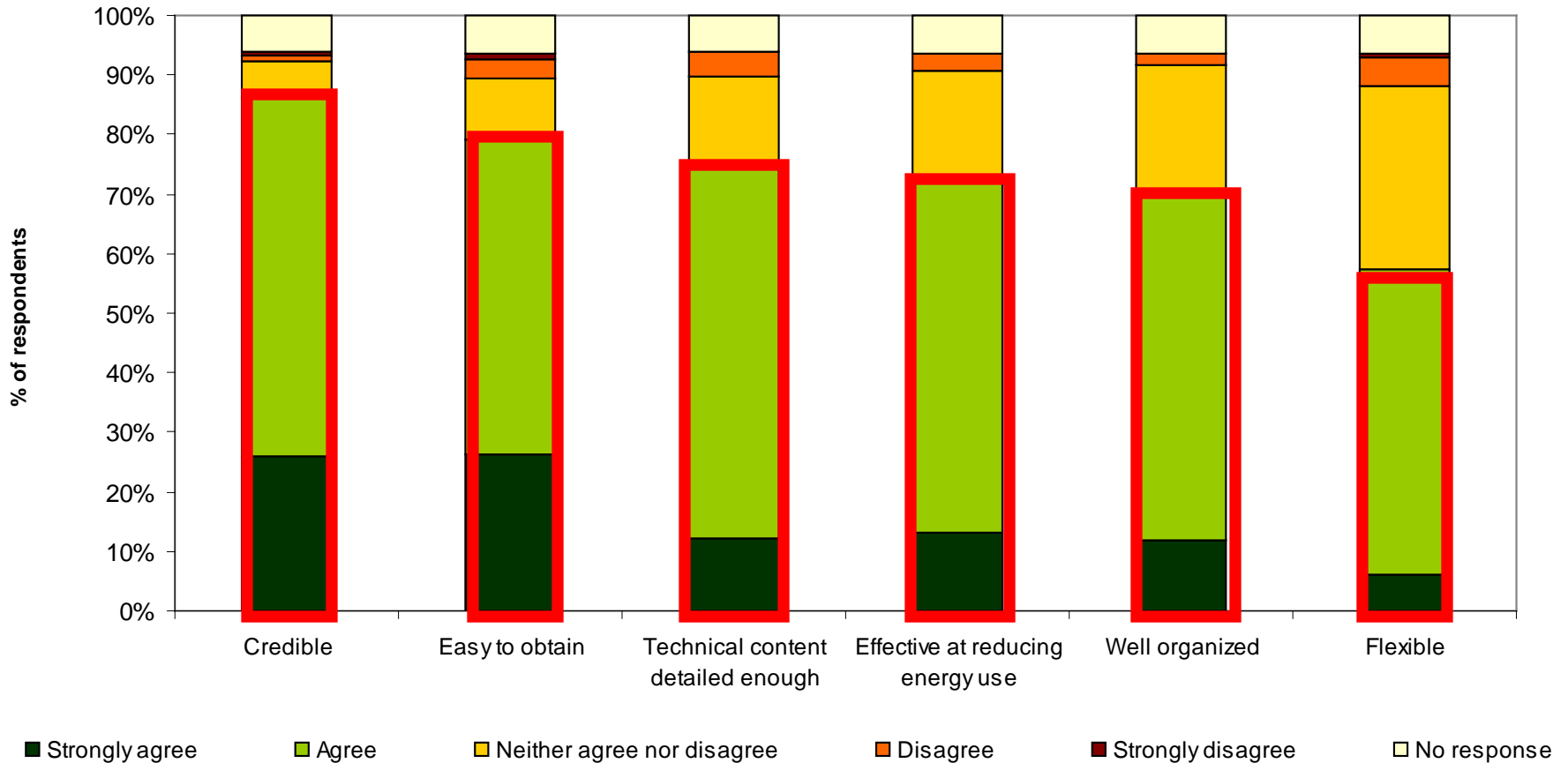


Efficiency improvements made for the first time after reading the AEDGs



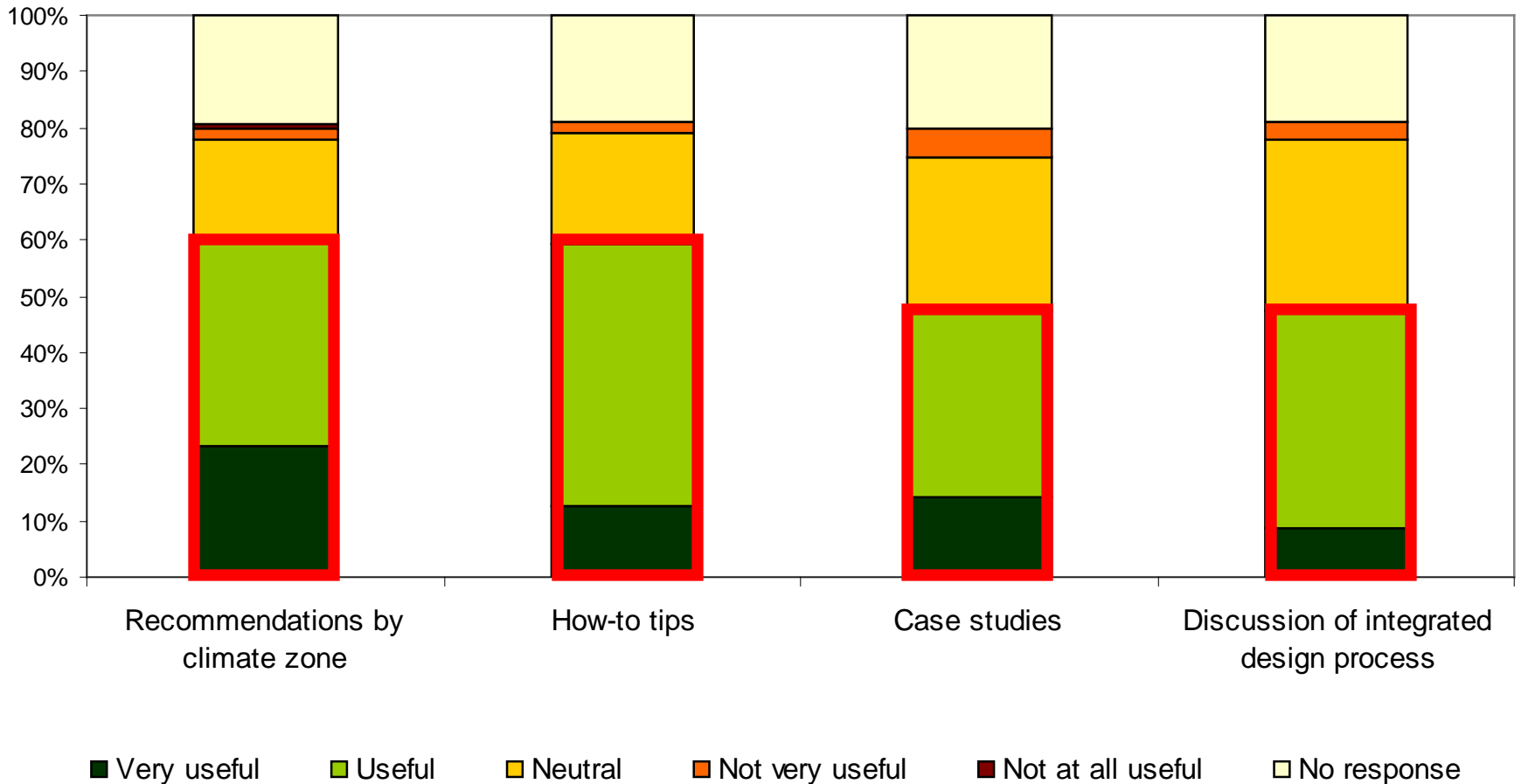
n=20

AEDG user ratings



n=175

User ratings of AEDG components



n=175

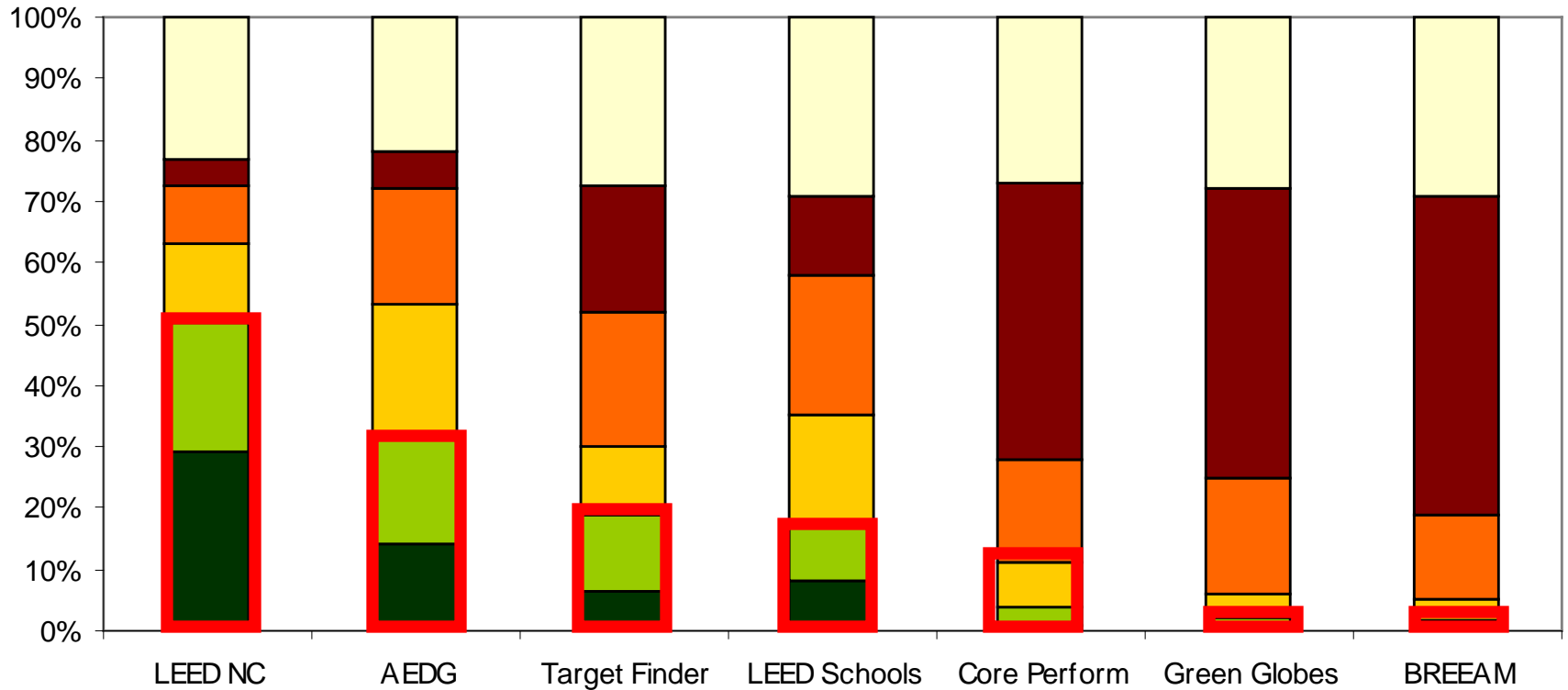
Distinct types of AEDG users

- ***Comprehensive users:*** Individuals who follow AEDG recommendations in a systematic way across all major components of the building design.
- ***Selective users:*** Individuals who rely on the AEDGs for specific components of the building design—e.g., envelope design or HVAC equipment efficiency specifications—but do not refer to the resource for other elements of the building design.
- ***Reference users:*** Individuals who use the AEDG recommendations as a back-check or quality assurance benchmark.

Communications value of AEDGs

User group	Number of AEDG users	% who used AEDGs for communications purpose
Comprehensive	21	48%
Selective	21	43%
Reference	12	25%

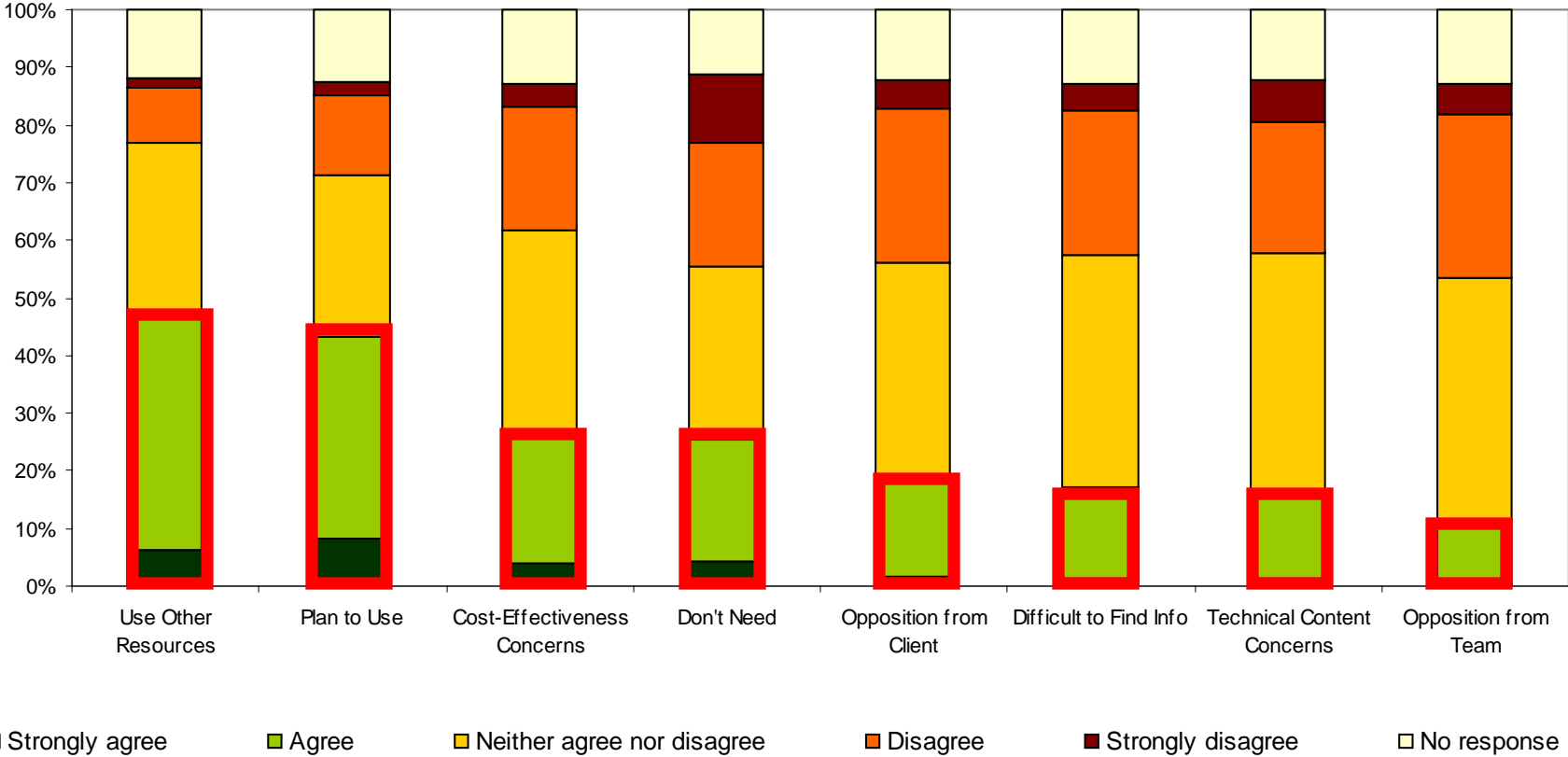
Comparative awareness and use



Use it often
 Used it once or twice
 Reviewed it
 Heard of it
 Not familiar with it
 No response

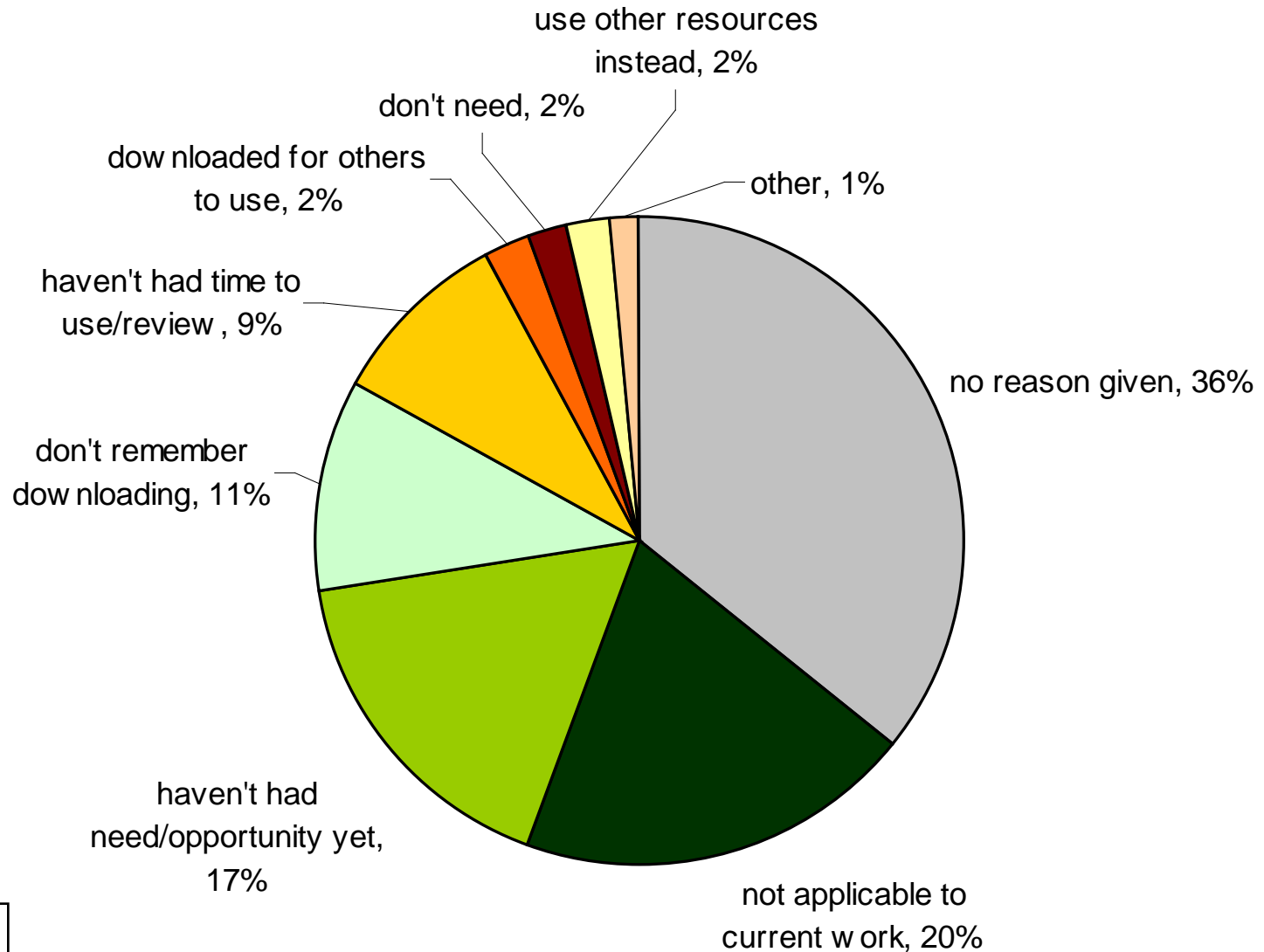
n=565

Reasons for not using AEDGs



n=235

Barriers to AEDG use



n=142

Marketing ideas from AEDG users

- **Increase AEDG marketing to architects, building owners, and other clients:**
 - **Marketing collateral for viral distribution**
 - **AEDG courses qualified to fulfill AIA sustainable design continuing education requirements**
 - **White papers and conference presentations**
 - **Distance learning opportunities**

User suggestions on AEDG content

- **Keep the guides flexible to accommodate different types of users:**
 - **Develop a calculator tool for analyzing tradeoffs**
 - **Create an online forum for AEDG users**
 - **Provide cross-references to sources of application-oriented technical guidance on key topics (ventilation, commissioning, duct sealing, etc.)**

Conclusions

- **On average a 24% reduction in design energy use below Standard 90.1-1999 is achieved by the buildings in our sample.**
- **A majority of AEDG users rate the resource favorably in terms of credibility, technical content, and effectiveness in reducing energy use.**
- **The AEDGs are used in a variety of ways, so ensuring flexibility is important to maintaining their value over the long term.**
- **A large number of users value the AEDGs as a communications tool. New marketing strategies could enhance that value and promote broader use of the AEDGs.**

Questions?

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