



**enable**

Your home for today,  
and tomorrow

## Communications Narrative D8 Submission

August 10, 2017

**HOUSE**

by Northwestern

Northwestern University

U.S. Department of Energy  
Solar Decathlon 2017



**enable**

Your home for today,  
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**HOUSE**  
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**communications  
narrative**

*Enable* by House by Northwestern is Northwestern University's first entry to the Department of Energy Solar Decathlon. Designed for active Baby Boomers living in Chicago's North Shore who are looking to downsize and buy their home for life, *Enable* delivers an **EN**ergized (energy-efficient and active lifestyle) and Adapt**ABLE** (the house meets residents' changing needs) experience for its target users. *Enable* is more than a house. It's a home for today, and tomorrow.

### AGING-IN-PLACE & UNMET HOUSING NEEDS FOR BABY BOOMERS

Baby Boomers, born between 1946 and 1964, are important to the U.S. housing industry given their sheer numbers. From 2016 to 2060, the population of individuals 65 and older is projected to more than double — from 46 to more than 98 million — which represents an increase from 15 to nearly 24 percent of the total population.<sup>1</sup>

In the city of Evanston, IL, home to Northwestern University and part of Chicago's North Shore, 20 percent of the population is projected to be 65 and older by 2020. A community that takes pride in its age-friendliness, Evanston is one of 284 cities in the world and 45 cities in the United States approved to enter the World Health Organization (WHO) Network of Age-Friendly Cities. Being a part of this network requires that a city adapt its structure and services — including housing — “to be accessible to and inclusive of older people with varying needs and capacities.”<sup>2</sup>

Recent Boomer homebuyers aged between 52-61 project they will live in their homes for at least 20 years<sup>3</sup> and approximately 90 percent of those over age 65 report wanting to stay in their homes as long as possible.<sup>4</sup> This desire to age-

in-place means that Boomers' houses will become important places for long-term care as they deal with disabilities and other aging-related health challenges. However, the Joint Center for Housing Studies of Harvard University estimates that only 1 percent of the current housing stock contains the key features required to support aging-in-place, such as zero-step entrances, single-floor living, wide hallways and doorways, wheelchair-accessible light switches, and lever-style door handles and faucets.<sup>5</sup>

It is with this housing shortage and Evanston's interest in improving its current structures and services to create a culture of age-friendliness in mind that the Solar Decathlon team at Northwestern University set about designing a highly energy-efficient, fully-accessible home for the aging Baby Boomer demographic (see renderings in Appendix A).

## MARKET RESEARCH, MESSAGING, & BRANDING

### MARKET RESEARCH

The House by Northwestern (HBN) team took a user-centric design approach to ensure that *Enable* met the actual needs of our target demographic. We conducted more than 50 hours of research, home visits, and interviews with 20 Baby Boomers from Evanston, IL. We analyzed our user research data to develop housing priorities for our target demographic. We determined the importance of each priority by coding the number of times each was mentioned throughout the course of our research (Figure 1).

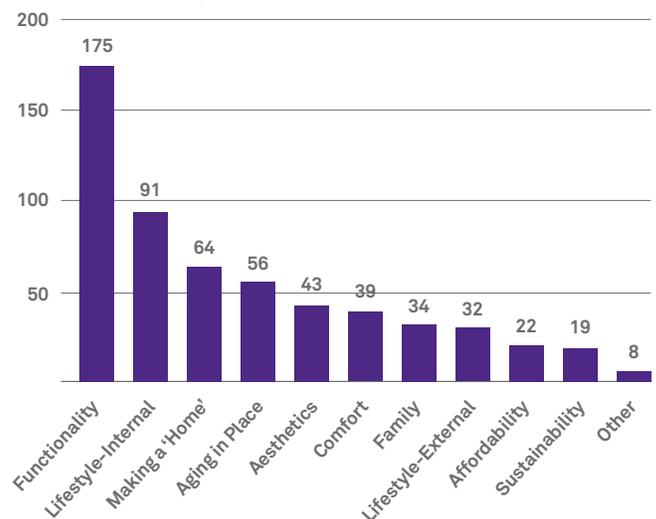


Figure 1. Target demographic housing priorities (ranked in order of importance). Source: House by Northwestern User Research Team ([bit.ly/2hgkw1k](http://bit.ly/2hgkw1k))

We then categorized the priorities data into the following housing features, listed in order of importance to our target demographic: **comfort and livability, high-performance with functionality, easy home maintenance, sustainability, and affordability.** These priorities not only informed the design process, but also provided insight on key messages for outreach.

The crux of HBN’s design efforts was to create a home that balances the needs of the market with our team’s desire to create a sustainable, environmentally-friendly home. By packaging energy efficient and sustainable features into a comfortable, beautiful, accessible, and easy-to-maintain home, *Enable* offers sustainability without compromise.

### USER PERSONAS: MICHAEL & LISA

From the market research data, we developed user personas to describe *Enable*’s future residents.

The couple, “Michael” and “Lisa,” are married and live in Evanston, a city just north of Chicago that is home to Northwestern University. They are in their late-50’s and have two kids, but are recent empty-nesters. Their daughter is in college and their son graduated and lives in St. Louis with his fiancée. Michael works at a banking firm in downtown Chicago (about 10 miles south of Evanston) and commutes there daily. Lisa is a graphic designer and works from home. They both expect to retire in the next 10-15 years. Michael and Lisa are looking to downsize from their current home, but still need room to entertain large parties and host their children, who enjoy visiting during the summer and over the holidays.

By developing user personas, we were able to understand and respond to the needs of our target demographic. By knowing the problems that Michael and Lisa face, we grew our understanding of other individuals in this age group and could therefore cater to them in our design. As such, our home simultaneously meets our users’ needs and the competition criteria. For example, instead of seeing a sunroom simply as a way to add space to the house, we also considered it as a space for Lisa to do yoga and art, or Michael to work on a project. We used our knowledge of Michael and Lisa and their habits, hobbies, and interests to create a story around *Enable* and see the home through their point of view.

## KEY MESSAGES

Using key insights from our market research, the House by Northwestern team created a set of messaging pillars to guide our team’s approach to the competition and inform our communications strategies and tactics (Table 1).

KEY MESSAGES			
AGING IN PLACE	IMPROVES RESIDENTIAL ENERGY EFFICIENCY	IMPROVES RENEWABLE ENERGY ADOPTION	ENVIRONMENTALLY RESPONSIBLE, DURABLE AND HIGH VALUE
PROMOTES GOOD HEALTH	PROMOTES LIFESTYLE	REFLECTS VALUES AND PRIORITIES OF LOCAL COMMUNITY MEMBERS	PROMOTES FLEXIBILITY AND ADAPTABILITY IN USE OF SPACE IN SHORT- AND LONG-TERM

Table 1. HBN Key Messages

## THE ENABLE BRAND

Guided by our market research, we named our house *Enable*: *Your home for today, and tomorrow.*

*Enable* describes the role our house plays in a resident’s life. It stands for: **EN**ergized, which refers both to energy-efficiency and an active lifestyle, and **AdaptABLE**, which means this is a house that can fit many roles and changes with residents as they grow older.

Our target demographic is between the ages of 55 and 70 and includes people who want to age in their homes. The name *Enable* emphasizes the ways in which our house enables its residents to live their lives to the fullest as their needs change:

- *Enable* is easy to maintain and adaptable to hobbies, so that it’s easier for residents to enjoy a flexible and energy-infused lifestyle in retirement.
- In older age, *Enable* can adapt to include space for an in-home caretaker or for a wheelchair to move freely around the house. It meets the accessibility guidelines of the Americans with Disabilities Act ([bit.ly/2f0EaOg](http://bit.ly/2f0EaOg)), which outlines steps necessary to make a space suitable for people of all ability statuses.
- *Enable*’s adaptability meets the needs of its residents in the present and future:
  - » Its “convertible room” can serve as a home office, secondary reading room for when a spouse is watching TV, or a guest bedroom

for family or a future live-in caretaker (or somewhere to escape a snoring spouse).

- » In the event that residents develop mobility and range-of-motion challenges, carefully-designed storage of daily kitchen essentials, such as plates, silverware, and drinkware, is located in lower shelves that are well within the guidelines for ADA-compliant design.
- » In addition to the long term adaptability afforded by the features above, *Enable's* spacious sunroom allows it to adapt with the seasons, nearly doubling its living space and creating a delightful interplay of indoor and outdoor living.

Our tagline, “Your home for today, and tomorrow,” defines how the house’s role changes as a person ages. It also speaks to *Enable's* minimal environmental footprint, which will become increasingly important as the world seeks to adopt clean practices to protect the planet.



Image 1. Enable logo

Our logo (Image 1) is designed to resemble a house. It incorporates Northwestern University’s brand assets through the use of its “facets,” which were used to connote rays of light, integral to our solar-powered home and its focus on maximizing natural lighting. The facets also represent the concept that great ideas occur at the intersection of seemingly unrelated ideas and disciplines. The intersecting facets signify our interdisciplinary HBN team, which has come together to shed new “light” on the design and construction of a house that blends technology, market potential, and design excellence with smart energy production and maximum efficiency. The use of two colors in the name *Enable* was intended to highlight the integration of energized and adaptable. The purple and white in the logo represent Northwestern’s colors.

Our color palette aligns with Northwestern University’s visual identity to help relate *Enable* and HBN to the Northwestern brand. We led with Northwestern Purple to create a striking and noticeable visual style. We used yellow as a secondary

color to represent the sun and to differentiate key elements of our logo and signage. Our typography is also aligned with Northwestern’s visual identity and expresses our clean, approachable, and flexible design style, as it relates to both our house and to our branded content.

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## OUTREACH & EDUCATION STRATEGY

The House by Northwestern communications team has created a comprehensive, consistent, and integrated strategy to inform and educate a wide range of audiences about House by Northwestern and the Solar Decathlon. We have promoted our key messages predominantly through in-person interactions, media relations, and social media and will continue to do so through on-site communications. We have consistently strengthened existing relationships with community members and sponsors, as well as sought out new connections to bolster our support and network. Our diverse content, ranging from educational material to daily house updates, has allowed us to engage with local HBN stakeholders, who then distribute our content to followers across the globe. The HBN team has four target audiences:

1. Target demographic (active Baby Boomers in Chicago’s North Shore)
2. Local community
3. Environmentally conscious individuals and organizations
4. Our university

While our key messages remained the same across our target audiences, the messages we emphasized changed based on the audience (Table 2).

For each audience, we mapped out preferences and interests to develop a custom outreach strategy using a combination of in-person interactions, media relations, social media, and on-site communications.

In the remainder of this narrative, we walk through each major mode of communication employed, our goals, strategies, and tactics to engage the audience of interest, and measures of success.

	AGING IN PLACE	ENVIRONMENTALLY RESPONSIBLE, DURABLE AND HIGH VALUE	GOOD HEALTH	LIFESTYLE	FLEXIBILITY AND ADAPTABILITY	ENERGY EFFICIENT	IMPROVES ENERGY ADOPTION	REFLECTS VALUES AND PRIORITIES OF LOCAL COMMUNITY
TARGET DEMOGRAPHIC	X	X	X	X	X			X
LOCAL COMMUNITY		X				X	X	X
COMMUNITY LEADERS		X				X	X	X
LOCAL YOUTH						X	X	X
ENVIRONMENTALLY CONSCIOUS ORGANIZATIONS		X	X			X	X	
NORTHWESTERN		X				X	X	X

Table 2. HBN messages emphasized by audience

## 1. IN-PERSON COMMUNICATION

### AUDIENCES:

- A. Target Demographic: Baby Boomers | B. Local Youth  
C. Community Leaders | D. Northwestern University**

#### 1A. TARGET DEMOGRAPHIC: BABY BOOMERS

**Goals:** To build an understanding of the breadth and meaning of sustainability in a demographic that, based on our market research, ranked the feature at the bottom of its housing priorities. To pique local Baby Boomer interest in Northwestern's Solar Decathlon entry and encourage involvement in the project. To learn the needs of our target demographic.

**Strategy:** Focus on consistent, in-person communications tactics, instead of electronic media, to build relationships and brand awareness. Encourage Baby Boomers to educate and involve their peers via word-of-mouth.

**Messaging Emphasis:** Promotes aging in place; promotes good health; promotes lifestyle; promotes flexibility and adaptability; reflects values of local community members

#### Tactics & Measures of Success:

*Sustainability and Green Design Study Group:*

**Tactics:** Collaborate with the Osher Lifelong Learning Institute (OLLI), a national continuing education program serving older adults with a branch at Northwestern, to offer a 14-week long study group focused on sustainability and green design. Lead discussions related to our project

including "What is the Solar Decathlon?," "Sustainable Architecture," "Aging-in-Place," and "Interior Design."

#### Measures of Success:

- 15 OLLI students participated in the study group. After the course ended, many participants chose to continue their involvement with the project.
- We incorporated the Baby Boomers' priorities in the house. Conversations focused primarily on how to create a house that promotes good health, a resident's lifestyle, and flexibility and adaptability.
- Participants introduced HBN to at least six more members of our target demographic.
- Three members from the original OLLI study group appear in our audiovisual submission.
- Many of our Baby Boomers feel a sense of ownership of *Enable*. One OLLI member said this about her experience: "We came in to meet the students, and we had no idea how exciting this whole project really is. I hope I can live in a house designed this well for me as I continue aging and face the challenge of selling my large home and preparing to live my second act." (bit.ly/2wecZ5Q)

*Focus Groups:*

**Tactics:** Hold focus groups and conduct research to learn about our target demographic.

#### Measures of Success:

- Hosted five focus groups and gathered feedback on messages to be emphasized to Baby Boomers, such as indoor air quality and the role it should play in residents' health and lives.
- Conducted over 50 hours of research, including home visits and interviews.

- Research informed both the design of our house and our user personas, Michael and Lisa.

*Shopping Trips:*

**Tactics:** Invite members of target demographic and from OLLI class on shopping trips to select finishes for the house.

**Measures of Success:**

- Members joined the team on more than 20 shopping trips.
- Target demographic chose finishes that complement their lifestyles and desire to have an adaptable and flexible home.

*House by Northwestern Milestone Events:*

**Tactics:** Encourage attendance at important events.

**Measures of Success:**

- Baby Boomer community members have continued to support HBN's success by attending our groundbreaking and ribboncutting ceremonies (Image 2).
- Five of our most actively involved Baby Boomer community members will travel with the team to Denver for the Solar Decathlon to see the house in its most complete form.



**Image 2. OLLI members at HBN groundbreaking**

## 1B. LOCAL YOUTH

**Goals:** To educate local students about sustainability, the latest technologies and materials in energy-efficient design, clean energy technologies, and sustainable buildings. To provide an opportunity to explore real-world applications of class material and potential careers in the clean energy workforce.

**Strategy:** Meet with youth throughout the project to offer resources and support for local student-led projects whose values align with ours.

**Messaging Emphasis:** Improves energy efficiency; improves renewable energy adoption; reflects values of local community members

**Tactics & Measures of Success:**

*Design Thinking Residency:*

**Tactics:** Partner with the office supporting our local high school, the Northwestern University/Evanston Township High School (ETHS) Partnership Office ([bit.ly/2uQBnLj](http://bit.ly/2uQBnLj)). Engage with ETHS students on campus during their Design Thinking Residency (Image 3).



**Image 3. HBN and ETHS students during Design Thinking Residency**

**Measures of Success:**

- Eight ETHS students participating in a design thinking residency at Northwestern visited HBN twice to learn about the team, college life, and to participate in one of our weekly design critiques.

*ETHS Geometry in Construction Course:*

**Tactics:** Provide support for ETHS' year-long math course, in which high school students build a house that is donated to the city's affordable housing stock at the end of each school year.

**Measures of Success:**

- The HBN team attended the students' ribbon cutting ceremony and will invite those students back to *Enable's* ribbon cutting ceremony at the beginning of the 2017-2018 school year.
- Plans are in place to make *Enable* a continuing resource for this course when it becomes an educational hub in the community post-competition.

*After School Matters (ASM) Science Giants Program:*

**Tactics:** Establish relationship with youth development programs in the city of Chicago, such as ASM's Science Giants program, where high school teens learn how to develop and

teach science-based lesson plans for elementary school students.

**Measures of Success:**

- HBN students visited the Science Giants program and shared *Enable's* design and engineering work, as well as their experiences as HBN team members.
- HBN created a mentor relationship with many of these high school juniors and seniors through conversations about preparing for college and making the most of their freshman year.

### 1C. COMMUNITY LEADERS

**Goal:** To create lasting relationships with community leaders and bolster community support, particularly as we seek a permanent space for *Enable* in Evanston.

**Strategy:** Establish relationships with community leaders early on in the project and continue connections through regular correspondence in-person and via social media.

**Messaging Emphasis:** Promotes aging in place; environmentally responsible, durable and high value; improves energy efficiency; improves renewable energy adoption; reflects values of local community

**Tactics & Measures of Success:**

*City of Evanston:*

**Tactics:** Develop relationships with various levels of the city government to align *Enable* with the City of Evanston. Pitch city staff on the idea of permanently hosting *Enable* in Evanston and opening it up to the public after the competition.

**Measures of Success:**

- Evanston Mayor Steve Hagerty spoke at *Enable's* groundbreaking ceremony.
- Hagerty Consulting, the mayor's company, is now an HBN sponsor.
- The mayor, his staff, and the City Planning department are working with us to identify potential permanent lots for *Enable*.

*Evanston Age Friendly Task Force:*

**Tactics:** Leverage Evanston's commitment to the nationwide challenge of providing age-friendly housing and its position as one of 45 U.S. cities with the World Health Organization (WHO) Age-Friendly City designation.

**Measures of Success:**

- Through this Task Force, we connected with our target demographic and learned about some of the

most significant housing needs of this group in our community.

*Evanston Lumber & Local Marvin Design Gallery:*

**Tactics:** Establish mentoring relationship with this pillar of our local community. Solicit sponsorship.

**Measures of Success:**

- Evanston Lumber provided mentorship and advice during the construction phase of this project, in particular with ordering appropriate quantities of lumber and other materials (Image 4).
- Evanston Lumber's sister company, the local Marvin Design Gallery donated all windows and provided steeply-discounted doors.
- The president of Evanston Lumber leveraged his professional network to introduce us to other manufacturers who have since become sponsors.



Image 4. Facebook post about Evanston Lumber

*Evanston Art Center (EAC):*

**Tactics:** Meet with local Evanston art gallery to discuss partnership opportunities to create some of *Enable's* artwork and hold community workshops.

**Measures of Success:**

- EAC connected us with fifteen local artists. Many pieces of their art will be on display in *Enable* during the competition.
- Co-hosted a pinch-pot making workshop to make pottery for *Enable*, which bolstered support and awareness of HBN around Evanston (Image 5).



**Image 5. Facebook post about pinch-pot workshop with Evanston Art Center.**

## 1D. NORTHWESTERN UNIVERSITY

**Goals:** To earn institutional support, develop further connections for the project, and build interest across campus.

**Strategy:** Meet with major campus departments in-person early on and build connections to other departments and organizations. Encourage these stakeholders to promote HBN within their networks and also to share HBN content on their own social channels.

**Messaging Emphasis:** Environmentally responsible, durable and high value; improves energy efficiency; improves renewable energy adoption; reflects values and priorities of campus

### Tactics & Measures of Success:

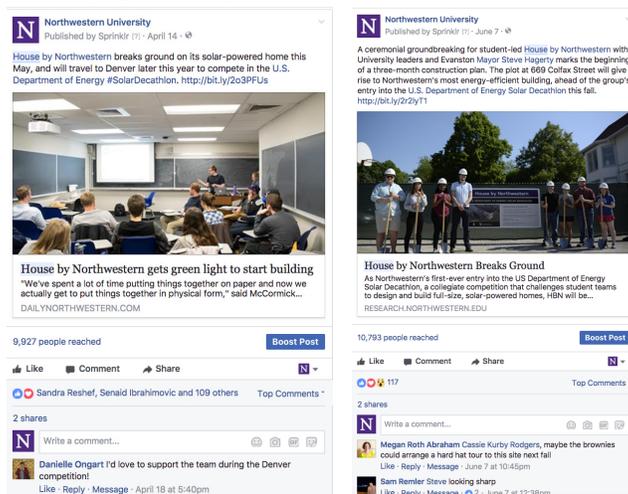
*Northwestern University Strategic Sustainability Plan:*

**Tactics:** Align with Northwestern's Strategic Sustainability Plan, which "sets measurable sustainability goals that address: the built environment, resource conservation, transportation, communication and engagement, and experiential learning ([bit.ly/2tRjVVF](http://bit.ly/2tRjVVF)).” Leverage HBN’s alignment with the plan to receive sponsorships and garner support from the campus community. Establish early relationships with departments to connect with sponsors and campus community members who support sustainability and the environment.

### Measures of Success:

- Formed relationships with departments including:

- Global Marketing, the Institute for Sustainability and Energy at Northwestern (ISEN), Facilities Management, Corporate Engagement, Alumni Relations and Development, and SustainNU (the sustainability group on campus).
- Early contact with SustainNU resulted in earning two grants totaling \$50,500 to help fund some of the house’s energy efficient features .
- Alumni Relations and Development, as well as Corporate Engagement have helped us fundraise hundreds of thousands of dollars through private donors and numerous corporate sponsors.
- Strong relationship with our Global Marketing department has garnered more widespread awareness about HBN across the Northwestern community, reaching between 8,000 and 10,000 people for each of Northwestern University’s four Facebook posts about the project (Image 6).



**Image 6. Facebook posts from Northwestern featuring House by Northwestern activities.**

- The Vice President of the Office for Research (OR) has provided significant funding for this project and also spoke at our groundbreaking ceremony
- OR published an article about HBN ([bit.ly/2sLZpp6](http://bit.ly/2sLZpp6)) that reached 18,500 Northwestern followers through Facebook and newsletters.

*Northwestern Student Body:*

**Tactics:** Develop grassroots student support for HBN by asking current members of our team to recruit new student team members and sending email blasts to faculty members and administrators from many academic departments.

### Measures of Success:

- The HBN team has included more than 50 students from more than 12 majors.

## 2. MEDIA RELATIONS

### AUDIENCES: Local community; environmentally conscious individuals and organizations

**Goals:** To raise awareness across Evanston about our project, the Solar Decathlon, and the benefits, affordability, and availability of clean energy solutions. Develop relationships with potential homebuyers.

**Strategy:** Develop relationships with local media outlets. Consistently pitch and publish articles about HBN in trade media.

**Messaging Emphasis:** Environmentally responsible, durable and high value; improves energy efficiency; improves renewable energy adoption; reflects values of local community

#### Tactics & Measures of Success:

*Local Media:*

**Tactics:** Pitch to local Evanston and Chicago-based media outlets including the Evanston Roundtable, Chicago Public Radio, The Chicago Tribune, and more. Develop relationships and consistent coverage by cornerstones of local community press.

#### Measures of success:

- Early partnership with The Evanston Roundtable, Evanston's only locally owned and operated newspaper, brought HBN into the homes of 15,000 families in Evanston via monthly Roundtable articles about the project. Full list at <http://bit.ly/2vBt352>.
- HBN appeared last spring on WBEZ Worldview, a show on the Chicago affiliate of National Public Radio (NPR, [bit.ly/2tY2Xcf](http://bit.ly/2tY2Xcf)).
- **A member of the local community who has kept up with House by Northwestern progress updates in The Evanston Roundtable has made an offer to buy our house after the competition; contract negotiations are underway.**

*Trade Media:*

**Tactics:** Pitch articles to trade publications, which include sponsors to our project, on-campus publications relating to sustainability, and better-known online publications relating to green energy.

#### Measures of Success:

- Renewable Energy World published an article about our house ([bit.ly/2vLQlq6](http://bit.ly/2vLQlq6)), stimulating interest in our project in circles outside the ones we had already permeated to their 130,000 followers.
- HBN is featured in a series in the StrXur online

magazine, the editorial arm of Bluebeam, our construction management partner ([bit.ly/2tXSy0e](http://bit.ly/2tXSy0e)), and has reached nearly 15,000 readers.

- Northwestern campus sustainability groups, SustainNU and ISEN, have each published articles about HBN, collectively broadcasting HBN to over 1,000 followers.
- Argonne National Laboratory, one of the Department of Energy's 17 National Laboratories and a Northwestern University partner, will visit Enable in August to broadcast a Facebook Live tour of our house to 95,000 followers.
- Through a partnership with BMW's marketing department, HBN will use a BMW i3 during the competition at no expense, and BMW will offer members of the Evanston community the chance to win an "HBN Smart Home Sweepstakes," which includes a one-month lease of the i3, and many of Enable's smart home features.

## 3. SOCIAL MEDIA & OWNED CONTENT

### AUDIENCES: Environmentally conscious individuals and organizations; Northwestern network and followers

**Goal:** Educate the public through digital tools about the HBN team, the Solar Decathlon, and the benefits, affordability, and availability of clean energy solutions on local, national, and global levels.

**Strategy:** Grow an engaged follower based on social media platforms by deploying consistent and informative content on Facebook, Twitter, Instagram, and our blog. Leverage in-person relationships with community leaders and organizations to receive support through social media.

*Sample weekly posting schedule:* [bit.ly/2tRf1Yz](http://bit.ly/2tRf1Yz).

**Messaging Emphasis:** Environmentally responsible, durable and high value; promotes good health; improves energy efficiency; improves renewable energy adoption

#### Tactics & Measures of Success:

*Posts About Sustainability:*

**Tactics:** Address the discrepancy in attitudes about and understanding of "sustainability" between age groups and demographics by sharing content and writing blog posts. Make renewable energy and environmental content more relatable for less-informed audiences. Promote the Department of Energy's mission to spread awareness about the topic.

#### Measures of Success:

- HBN shared articles 2-3 times a week relating to renewable resources, benefits of a "healthy home," and the economic benefits to green living.

- Wrote a blog post with the goal of “Debunking Myths about Sustainability” (bit.ly/2vLL5YW), which we featured on our website and Facebook.

*Posts About the Solar Decathlon:*

**Tactics:** Call attention to our role in the Solar Decathlon on each owned media platform.

**Measures of Success:**

- Shared posts on Facebook and Twitter from the Department of Energy and Solar Decathlon at least once a week.
- Wrote a blog post for our Facebook and site called “What is the Solar Decathlon?” (bit.ly/2u0KoGq).

*Posts About Our Team:*

**Tactics:** Include human-centricity and our team in content as often as possible.

**Measures of Success:**

- Included team members in pictures of the construction site, articles about our project, and posts about sponsors (Image 7).
- In addition to our “meet the team” posts on Facebook and Instagram, a large portion of our website is devoted to our team members (bit.ly/2vYnSsS).
- Our most popular social media post, a video about a team member, reached almost 2,000 people. (bit.ly/2ucg4Sm)



**Image 7. Facebook post about terrarium-building activity with local organization Cultivate**

*Posts About Our Project:*

**Tactics:** Provide near-daily project updates and connect with sustainability-minded individuals and groups.

**Measures of Success:**

- We developed the #WeeklyHBN hashtag to accompany 360° videos (bit.ly/2tQUbIV) of our home’s construction progress, which often reached over 500 views as a result of shares from followers and Northwestern University departments.
- When the New York Times posted an article about the impact increasing the efficiency of air conditioners would have on global warming, we shared the post with statistics about our own team’s environmentally-friendly habits and how *Enable* is equipped with a heat pump instead of an air conditioner (Image 8).
- For professionals in the green industry interested

in more specific technological elements of *Enable*, our website features a page entirely devoted to “Our house.” (bit.ly/2vbquq2) This page describes our approach to each contest and succinctly explains features of the house that address each contest.

- As a result of one of our trade media pitches, Argonne National Laboratory will visit *Enable* in August to broadcast a Facebook Live tour of our house to 95,000 followers.



**Image 8. Facebook post aligning HBN with climate change story from *The New York Times*.**

*Posts About Our Sponsors:*

**Tactics:** Use social media as a beacon through which to feature our sponsors. Define how a sponsor’s contribution will play a role in the competition and in *Enable* in each sponsor post (Figure B1 in Appendix).

**Measures of Success:**

- Promoting sponsors on social media allowed us to engage their followers as a result of shares and comments of our posts.
- Sponsors view HBN as a source of pride and continue relationships with students through site visits and team lunches.

See Table B1, Appendix B, for reach of shared and owned content.

**4. ON-SITE COMMUNICATIONS**

**AUDIENCES: Environmentally conscious individuals and organizations; Solar Decathlon**

**Goals:** To distill a two-year project into a palatable and approachable tour and complementary signage. To create interesting and informative signage about HBN.

**Strategy:** Develop a story about our house that translates into a tour script. Meet with science communications professionals to refine on-site materials.

**Messaging Emphasis:** Promotes aging in place; environmentally responsible, durable and high value; promotes good health; promotes lifestyle; promotes flexibility and adaptability; improves energy efficiency; improves renewable energy adoption; reflects values of local community

**Tactics & Measures of Success:**

*Tour:*

**Tactics:** Use our tour to tell the human-centered side of our story. Meet with science communications consultants and research each feature of the house to develop script.

**Measures of Success:**

- Michael and Lisa appear throughout the tour and emphasize *Enable's* story.
- Each tour stop includes aspects pertaining to energy-efficient features and features important to our demographic.
- We will measure our success when we open *Enable* to the local community for tours and a ribbon cutting ceremony before shipping it to Denver. This will give us the opportunity to modify our tour and communications strategy after receiving input from community members.

*Signage:*

**Tactics:** Create signage for the public exhibition that includes statistics and technology-specific information to complement our human-centered tour experience.

**Measures of Success:**

- Each complex, efficient, and renewable technology is clearly and effectively explained through signage.

*Audiovisual Presentation:*

**Tactics:** Incorporate human-centricity and user research into video deliverable. Perform a competitive analysis to create an original and effective preview of *Enable*.

**Measures of Success:**

- We determined that our strategy would be original and effective by researching past competitions' top teams

and this year's competitors.

- Three members from the original OLLI Baby Boomer study group appear in our audiovisual submission.

*Handout:*

**Tactics:** Give visitors a memorable handout unique to *Enable*. Designate a giveaway that aligns with our house's emphasis on functionality and reminds visitors of our *Enable's* unique design attributes.

**Measures of Success:**

- Instead of a traditional paper handout, we elected to distribute samples of one of the features of *Enable* that is uniquely HBN. We will be giving away small spray bottles of PURETi, a treatment for windows and surfaces that is activated by sunlight and works to remove VOCs from the air.
- Because we are the only house at the Solar Decathlon 2017 using PURETi, visitors using these samples will remember our house each time they can forego cleaning their windows.
- PURETi can be used on any window, making this a highly practical and functional giveaway.

See Appendix C for all on-site signage.

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## CONCLUSION

Through every step and over every medium of communications, the HBN communications team exchanged knowledge and information with its stakeholders. By making in-person conversations and engagement a priority, HBN gathered information and learned from its many stakeholders as well as built authentic and enduring relationships. HBN used this input to inform its design process, communications strategy, and content deployment. In turn, we have engaged community members by producing and sharing educational content over all platforms, from signage to social media, that relates to our house, team, and process, as well as about the Solar Decathlon and clean energy.

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## APPENDICES

### APPENDIX A. RENDERINGS (CREDIT: ADRIAN SMITH + GORDON GILL ARCHITECTURE)



Image A1. Overhead exterior view from the southeast, Summer



Image A2. Exterior view from the southeast, Winter



Image A3. Exterior view from the southeast.



Image A4. Exterior view from the southwest.



Image A5. Interior view from front door, looking into the living room, dining room, and kitchen.



Image A6. Interior view from door to the convertible room, looking into the living room and out to the sunroom.



Image A7. Interior view of the master bedroom; door to the right exits to the sunroom.

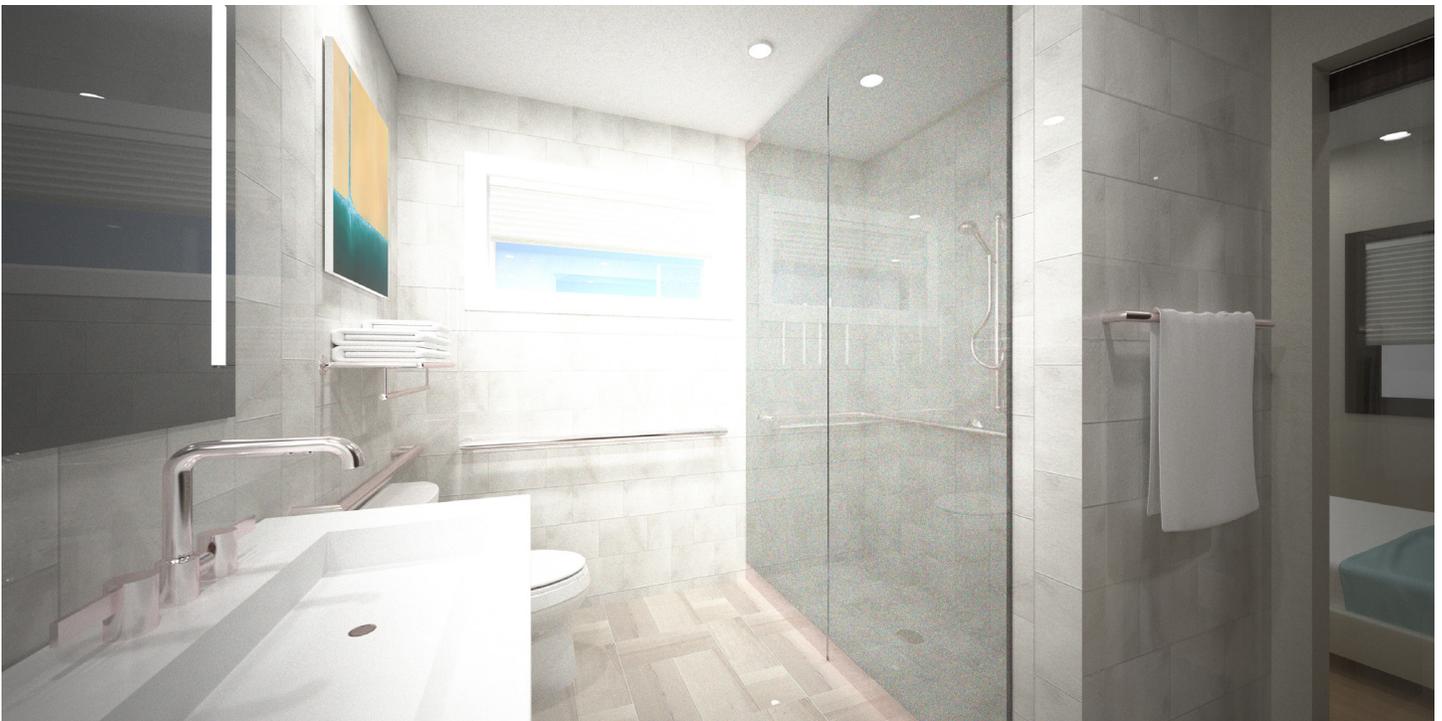


Image A8. Interior view of the master bathroom.

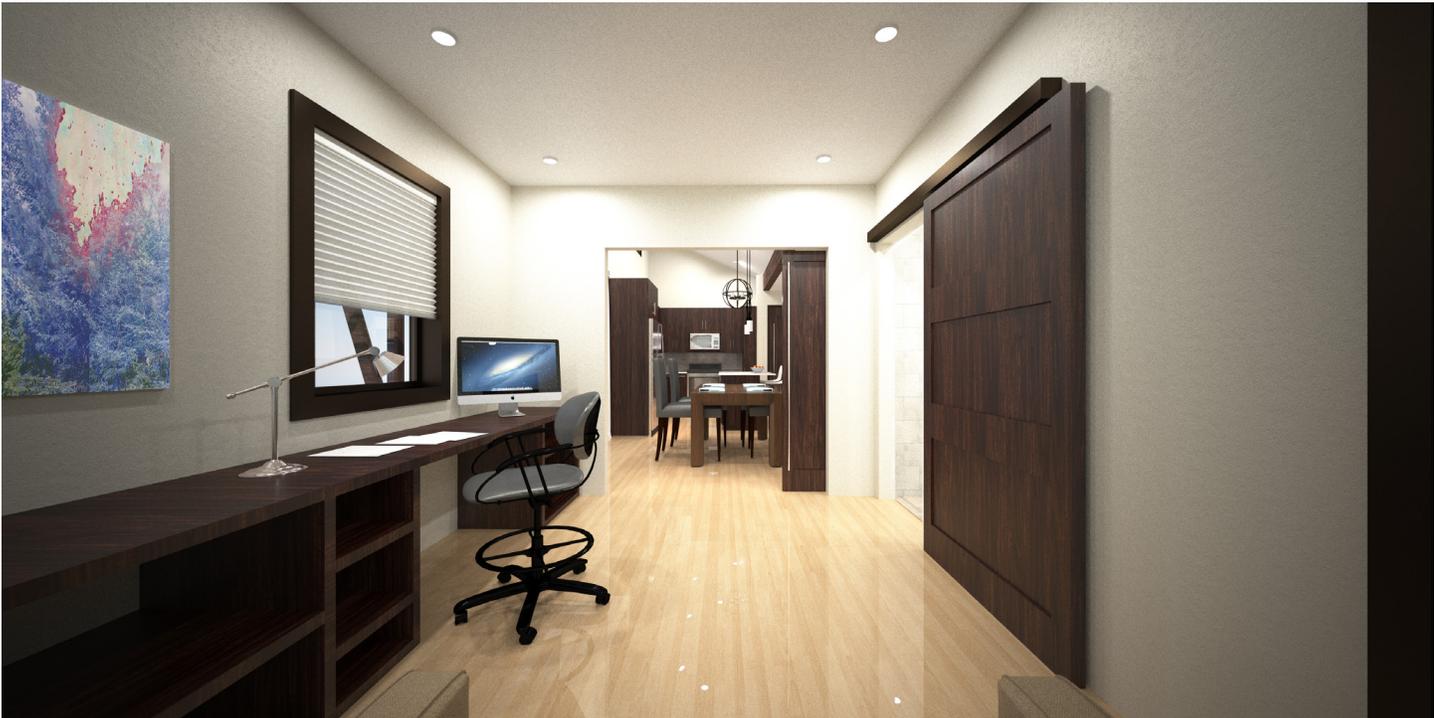


Image A9. Interior view of the convertible room, looking out to the dining room and kitchen.

## APPENDIX B. AUDIENCE REACH

SOURCE	MEDIA TYPE	AUDIENCE REACH
HBN OWNED CONTENT	<ul style="list-style-type: none"> <li>• Facebook page</li> <li>• Twitter account</li> <li>• #WeeklyHBN</li> <li>• Videos</li> <li>• Blogs</li> </ul>	<ul style="list-style-type: none"> <li>• 400 Likes on facebook</li> <li>• 150 Followers on twitter</li> <li>• 500-700 Views</li> <li>• 2,000+ Engagements</li> </ul>
NORTHWESTERN GLOBAL MARKETING	<ul style="list-style-type: none"> <li>• 4 Facebook posts</li> </ul>	<ul style="list-style-type: none"> <li>• 129,000 followers</li> </ul>
OFFICE FOR RESEARCH	<ul style="list-style-type: none"> <li>• 2 articles</li> </ul>	<ul style="list-style-type: none"> <li>• 18,500 followers</li> </ul>
SUSTAIN NU	<ul style="list-style-type: none"> <li>• 4 articles</li> <li>• 4 Facebook posts</li> </ul>	<ul style="list-style-type: none"> <li>• 1,000 followers</li> </ul>
INSTITUTE FOR SUSTAINABILITY & ENERGY AT NORTHWESTERN	<ul style="list-style-type: none"> <li>• 2 Facebook posts</li> <li>• 2 articles</li> </ul>	<ul style="list-style-type: none"> <li>• 600 followers</li> </ul>
EVANSTON ROUNDTABLE	<ul style="list-style-type: none"> <li>• 7 articles</li> </ul>	<ul style="list-style-type: none"> <li>• 15,000 subscribers</li> </ul>
WBEZ RADIO STATION	<ul style="list-style-type: none"> <li>• 1 radio interview</li> </ul>	<ul style="list-style-type: none"> <li>• Northern IL, southern WI, northern IN, southwest MI</li> </ul>
RENEWABLE ENERGY WORLD	<ul style="list-style-type: none"> <li>• 1 article</li> </ul>	<ul style="list-style-type: none"> <li>• 130,000 followers</li> </ul>
ARGONNE NATIONAL LABORATORY	<ul style="list-style-type: none"> <li>• 1 Facebook Live tour</li> </ul>	<ul style="list-style-type: none"> <li>• 95,000 followers</li> </ul>
STRXUR	<ul style="list-style-type: none"> <li>• 1 article</li> <li>• 1 video</li> </ul>	<ul style="list-style-type: none"> <li>• 15,000 website visitors/month</li> </ul>

Table B1. Reach of HBN media relations, social media, and content creation efforts.

**APPENDIX C. ON-SITE COMMUNICATIONS MATERIALS**

## APPENDIX C1. ADA TOUR ROUTE & SIGNAGE PLAN

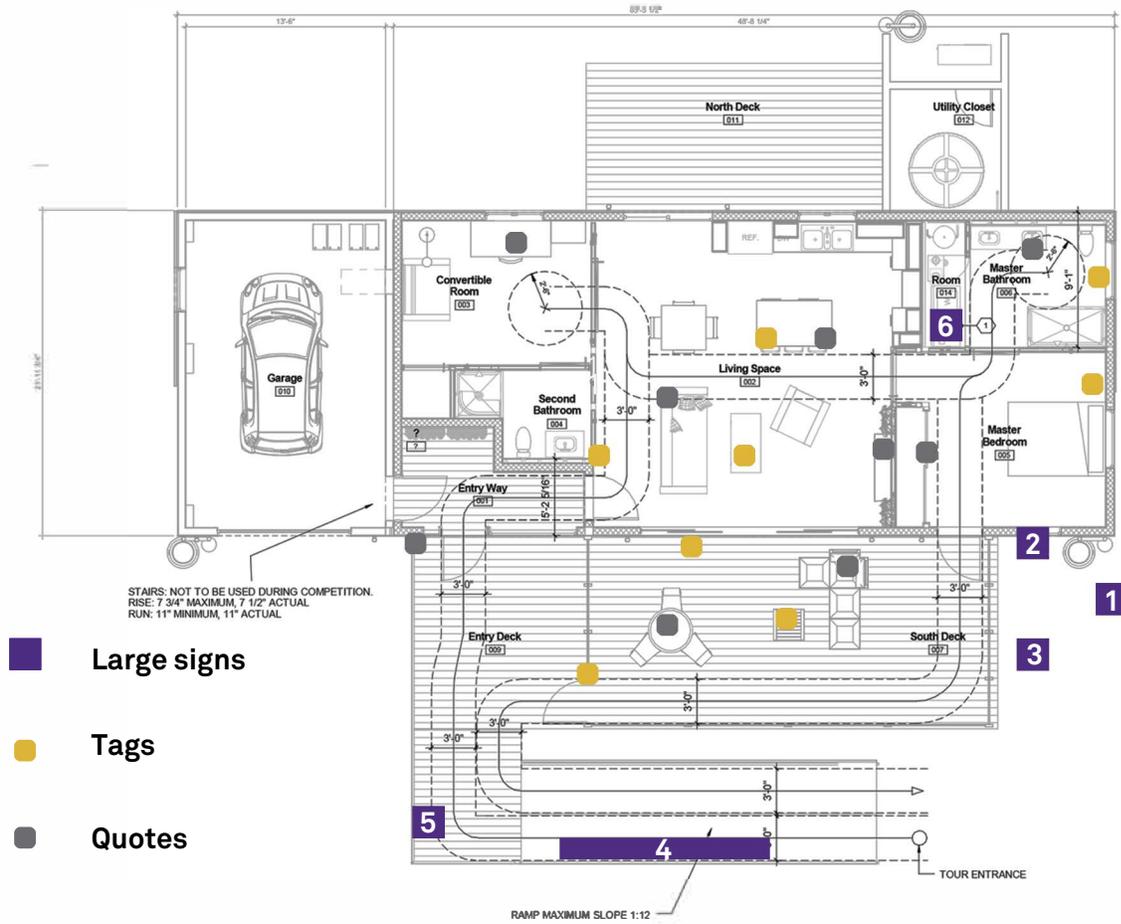


Image C1a. ADA tour route and numbered signage.



# enable

Your home for today,  
and tomorrow

## OUR PARTNERS & SPONSORS

### DIAMOND \$100,000+

A | S ADRIAN SMITH + GORDON GILL  
G | G ARCHITECTURE

### PLATINUM \$50,000 - \$99,999



Northwestern  
sustainNU

### GOLD \$25,000 - \$49,999



Thornton Tomasetti

### SILVER \$10,000 - \$24,999



### BRONZE \$5,000 - \$9,999



Northwestern  
McCORMICK SCHOOL  
OF ENGINEERING



RONBOW

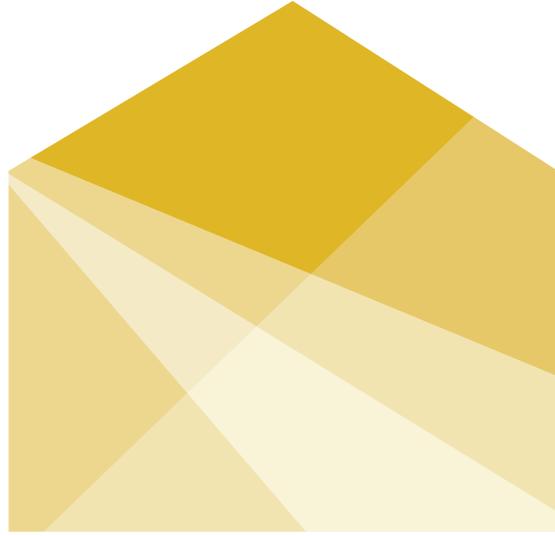


# HOUSE

by Northwestern



# welcome to



# enable

Your home for today,  
and tomorrow

energized & adaptable

- energy-efficient; supports an active lifestyle
- adapts to its residents' needs

#### OUR TARGET MARKET

Baby Boomers (ages 55-70) who live on Chicago's North Shore

#### MARKET NEED

Only 1% of the current homes in the U.S. have key features to support aging-in-place

#### OUR VISION

To promote sustainable living without compromise

#### OUR MISSION

To be a model for environmentally-friendly aging-in-place and a framework for increasing the housing stock for an aging population

#### OUR APPROACH

**User-centric design:** entire process guided by input from our target market about how to best meet their needs

**HOUSE**  
by Northwestern



Through hundreds of hours of research and interviews, our team developed user personas that describe the couple who might someday live in this home.

# Meet Michael & Lisa

- Recently became empty nesters
- Looking to downsize their home
- Plan to retire in 10-15 years
- Enjoy entertaining friends for dinner
- Plan to travel more
- Would like to age-in-place



**MICHAEL:**

- works in downtown Chicago
- loves to cook
- home art collector

**LISA:**

- graphic designer
- loves to garden
- avid reader

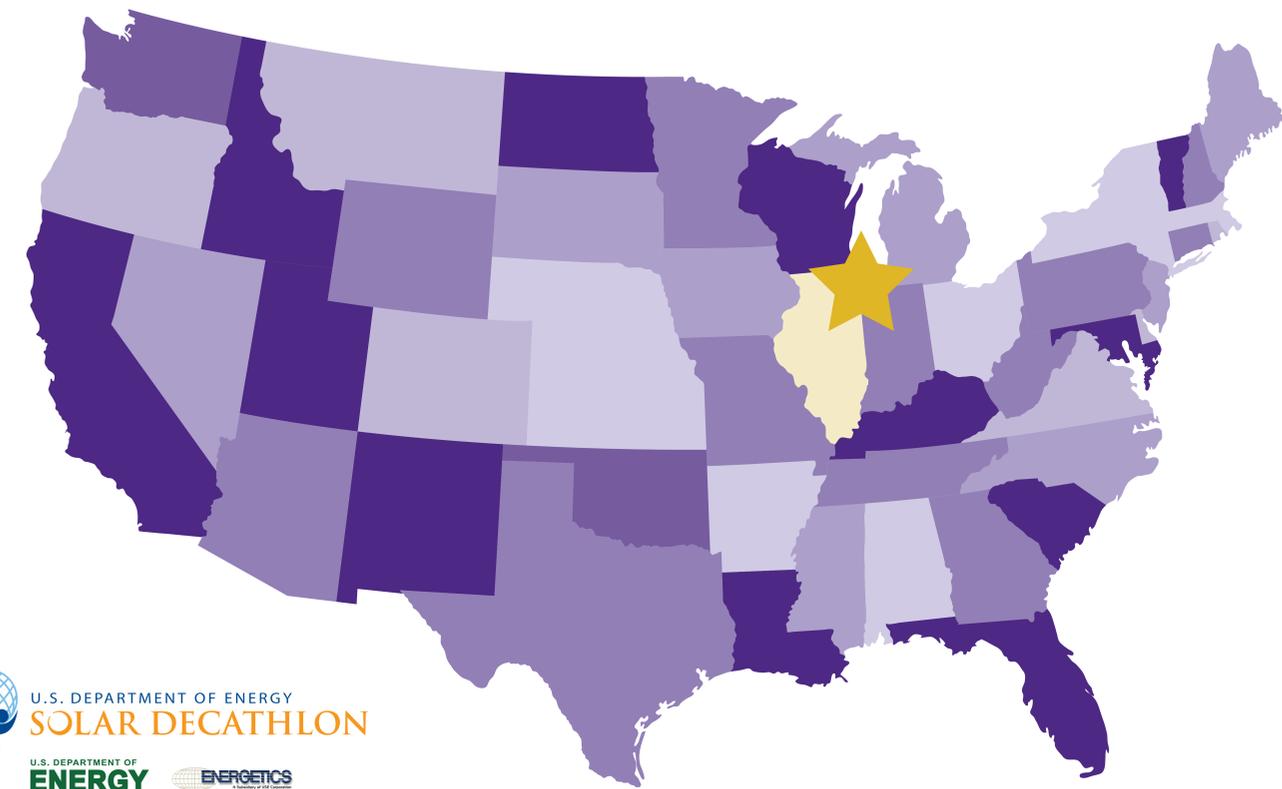
**PRIORITIES IN HOUSING:**

- Functionality • Adaptability • Beauty
- Accommodating an active & independent lifestyle

.....

**According to our research, this demographic values functionality and livability over sustainability.**

When you see  you're reading Michael and Lisa's thoughts about what they want in a house.



## ★ EVANSTON, IL:

Bordering the north side of Chicago, home to Northwestern University and **enable**.

- **World Health Organization (WHO)**-designated Age-Friendly City (one of 284 worldwide and 45 in the U.S.)
- **Committed to Sustainability:**
  - 100% homes powered by renewable energy
  - In 2016, achieved 20% reduction in GHG emissions vs. 2005 baseline



# enable

Your home for today,  
and tomorrow

## **enable: A HOME WHERE YOU CAN AGE-IN-PLACE:**

Aging-in-place is the ability to live in one's own home and community safely, independently, and comfortably, regardless of age, income, or ability level (Source: CDC).

### **ADA COMPLIANCE:**

Many of **enable's** features are compliant with the Americans with Disabilities Act (ADA), which will help residents age-in-place.



designates ADA-compliant features

Approximately

# 90%

of Baby Boomers say they want to age-in-place  
(Source: AARP)

# What powers **enable**?

Roof-Integrated Solar Panels



Residential DC Battery System



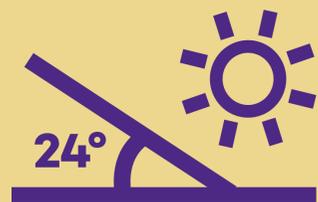
6.5 kW U.S.-Made Solar Panels



25 kWh DC AGM Battery Bank

### WHY ROOF INTEGRATION?

- Looks like rest of roof
- Lasts longer than roofing
- Saves material costs
- Simpler to install



24°-pitch of north roof allows for near-optimal energy gain from solar panels.



No panels are shaded at any point of the year.



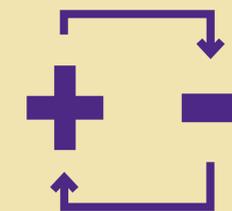
Supplies >100% of **enable's** annual energy needs, including an electric car.



Stores solar energy from the day to be used at night.



Reduces DC-AC conversion losses compared to AC-coupled batteries.



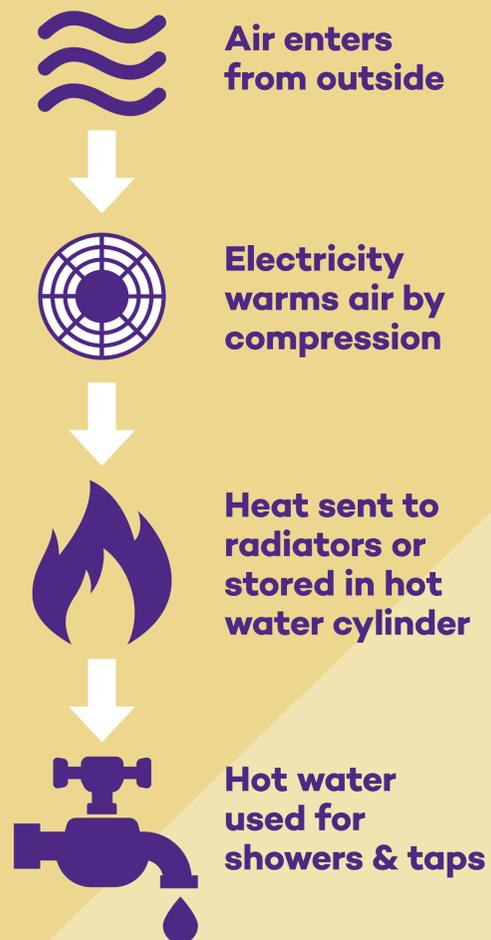
Provides battery backup in the event of a power outage, while still allowing the solar panels to charge the batteries.

# HVAC SYSTEM:

## Providing health and comfort

Highly-efficient heating, cooling, and ventilation system means that our home will be 90% more efficient than the average home in our community

### Air Source Heat Pump

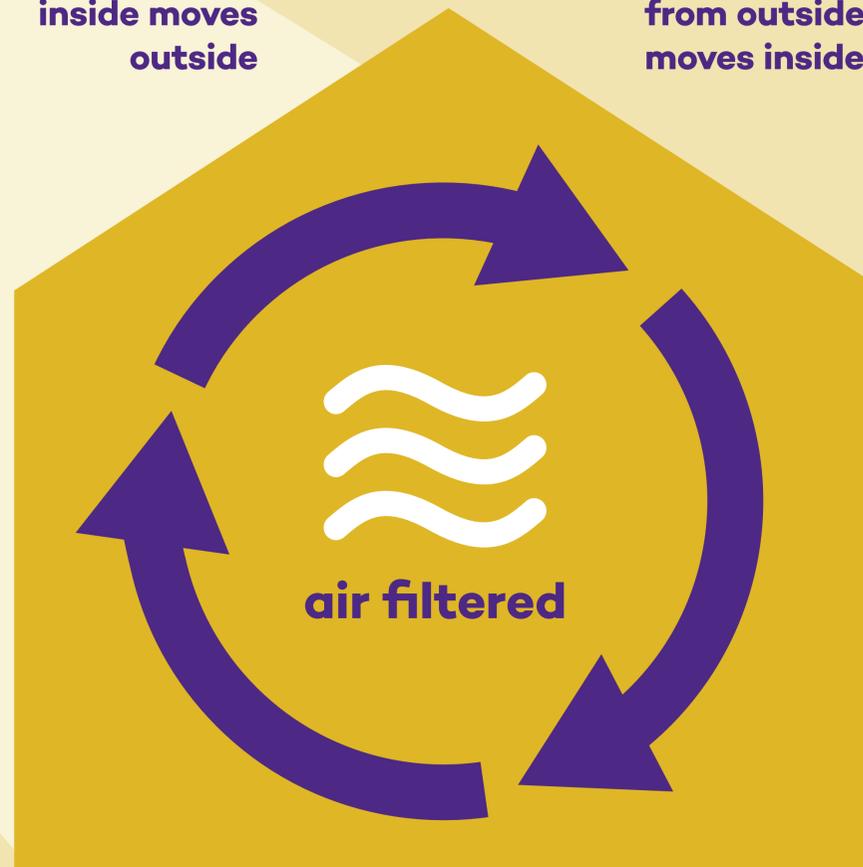


- Unit holds world record for cooling efficiency performance
- Over 100% efficient: 1 unit of energy in produces 4-6 units of heating or cooling energy out
- 4x more efficient at heating than most advanced furnaces
- Heats water with same efficiency as a conventional water heater
- Dynamic humidity controller removes moisture for maximum comfort

### Energy Recovery Ventilation

Stale air from inside moves outside

Fresh air from outside moves inside



- Ensures constant supply of fresh air
- Reduces carbon dioxide (CO<sub>2</sub>) build-up indoors
- 92% effective heat recovery reduces need to re-heat or re-cool outside air

# DID YOU KNOW?

An HBN decathlete built  
this table from a fallen tree  
by our construction site.

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**

**ENERGETICS**  
A subsidiary of H&M Companies

# TOUCH ME!

I might look like stone, but I'm actually made from the same type of glass as your cell phone screen.

I'm more durable **AND** more environmentally-friendly, since I don't require mining or transportation of stone.

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**

**ENERGETICS**  
A Division of NRG Energy



This EPA stamp of approval means that **enable's** toilets and shower heads use at least 20% less water than regular models.

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**

**ENERGETICS**  
A subsidiary of GE Energy



# LUNA LIGHTS

Under-mattress motion sensors turn on nightlights to prevent nighttime falls and can notify caretakers of potential falls.

**FUN FACT:** These night lights were created by Northwestern alums!

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**



# DID YOU KNOW?

Our plants are watered via a drip irrigation system that uses reclaimed rainwater, which further reduces **enable's** water usage.

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**

**ENERGETICS**  
A subsidiary of ENR Corporation

# Using sunlight to clean

## PHOTOCATALYSIS



*Sunlight activates  
surface coating*



*Water vapor  
becomes oxidizers*



*Oxidizers destroy  
VOCs & pollutants*

**FUN FACT:** Treated with a clear, non-toxic coating, **enable's** windows clean themselves and the surrounding air.

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**

**ENERGETICS**  
A subsidiary of the U.S. Government

# Thank you for visiting our home!

**#HBN2017**

  **@HousebyNU**

 **HousebyNorthwestern**

 **www.northwestern.house**

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**

 **ENERGETICS**  
A Subsidiary of VSE Corporation

**“I see a huge need for home design that allows people to age-in-place, and also floorplans and features that have maximum flexibility for spaces to be multipurpose or easily converted from one use to another.”**

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**

**ENERGETICS**  
A member of DOE Corporation

**“Love makes a house a home. It should offer comfort and a sense of peace and beauty—almost religious, like a sanctuary.”**

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**



**“A home appeals to the senses—like a ticking clock, interesting lighting, fresh flowers and candles that smell delicious. It has textures that invite you to sit down and relax.”**

U.S. DEPARTMENT OF  
**ENERGY**



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**ENERGETICS**  
A member of DOE Corporation

“I wanted my home to  
feel fresh, modern, lighter.  
I didn’t want to feel *old*.”

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**ENERGY**



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**SOLAR DECATHLON**

**ENERGETICS**  
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**“I really think that women  
need their own space  
to themselves.”**

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**“I have no idea what is in that top cabinet. It’s too hard for me to get to so I never try.”**

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**ENERGY**



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**SOLAR DECATHLON**



**“I’m not ready to  
give up my space  
and independence.”**

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**ENERGY**



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**SOLAR DECATHLON**

 **ENERGETICS**  
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**“What I love about my home is that it expands and contracts. It changes with the seasons.”**

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**

**ENERGETICS**  
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**“Some homes are  
beautiful, but aren’t  
made for people.”**

U.S. DEPARTMENT OF  
**ENERGY**



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**

**ENERGETICS**  
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## APPENDIX C2. HANDOUT: PURETi 1 OZ. SAMPLE

Hang tag to be affixed to 1 oz sample bottle



2" x 3" Hang Tag Side 1



1 oz. sample bottle



2" x 3" Hang Tag Side 1



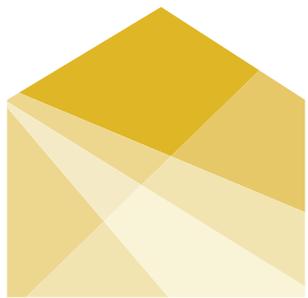
APPENDIX C3. HOUSE BY NORTHWESTERN UNIFORM



FRONT



BACK



**enable**

Your home for today,  
and tomorrow

**HOUSE**

by Northwestern

**energized & adaptable**

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Thornton Tomasetti

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**BRONZE**  
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RONBOW



WOOLF DISTRIBUTING

RIGHT  
SLEEVE



LEFT  
SLEEVE



3 inches high

4 inches wide