

The Washington Court Housing Survey: A Study of Accessibility and Universal Design in Affordable Housing—Executive Summary

University of Iowa Clinical Law Program

I. Background: The Washington Court Survey and Study	192
II. The Washington Court Complex: The Building, Key Partners, Funding, and Building Codes	194
A. The Building	194
B. Development Team	194
C. Funding	194
D. Building Codes, Accessibility Standards, and Universal Design Guidelines	195
III. The People of Washington Court	196
A. Basic Demographics	196
B. Functional Limitations of Residents	197
IV. Universal Design Features and Quality of Residents' Lives	199

This article is the executive summary of the results of a research study about tenant awareness, use, and benefits of accessibility and universal design features in an affordable housing complex in Dubuque, Iowa. Released in April 2009, the project and research study were developed by student legal interns at the University of Iowa Clinical Law Program under the supervision of Professor Leonard A. Sandler.

The interns who participated in the design, construction, and evaluation of the building; created and administered the survey; and wrote this report include Sara Stephenson, Andrew Ward, Syd Gernstein, Aaron Aizenberg, Rachel Antonuccio, Kirsten Arnold, Todd Bagby, Kevin Barstow, Ross Binder, Scott Burrill, Michelle Croft, Jackie Famber, Jason Fernandez, Nick Kehrwald, Andrew Knutson, Jayne Lady, Abby Lemek, Karla Martinez, Adam McCabe, David Milender, Jennifer Moyer, Trent Norman, Reuben Ortega, Benton Page, Bill Pepper, Tom Reuland, Roselyn Tyson, Abby Van Harpen, Matt Van Maasdam, and John Walker.

The authors gratefully acknowledge the assistance and contributions of the tenants of Washington Court, including John and Mary Gronen, Jolene Kingeter, David Harris, Kelly Larson, Paul Kalb, Jordan Pettus, Mishelle Eckland, Rebecca Yoder, Helen Schartz, Lisa Halm-Warner, Heather Ritchie, Sarah Davidson, Marilyn and Lary Belman, Doug Boothroy, Heather Shank, Ed Gaines, Lucy David, the Home Modifications Task Force ListServe, and the countless others that shared their expertise, insights, questions, and suggestions.

Copies of the report in print, digital, PDF, or other format are available from the Iowa Clinical Law Program (319/335-9023) or Professor Sandler (leonard-sandler@uiowa.edu).

- V. Competitive Advantages of Universal Design in Affordable Housing..... 200
- VI. Future Directions and Research..... 202
 - A. Expand the Washington Court Housing Survey 202
 - B. Conduct a Matched Pair Analysis of a Universal Design and Standard Built Single Family Home 203
 - C. Evaluate Universal Design in Historic Preservation..... 203
 - D. Universal Design in the Workplace and Commercial Facilities..... 203
 - E. Developing a Model to Record, Track, and Measure Project Costs 204
 - F. A Retrospective Examination of Iowa City’s B Street UD Home 204

I. Background: The Washington Court Survey and Study

The Washington Court Housing Survey: A Study of Accessibility and Universal Design in Affordable Housing is one of many community-based and systems reform initiatives the University of Iowa Clinical Law Program has designed and implemented in the last decade. The continuing goal of this project is to increase mainstream housing opportunities for persons with disabilities and promote universal design and sustainable, multigenerational housing of all types.

Throughout the country, in rural and urban areas, there is a critical shortage of affordable housing that is accessible and usable throughout a person’s life span. That shortage existed in Iowa long before floods, tornadoes, and other natural disasters devastated the state in 2008. Many Iowans who have experienced injury, illness, disability, or who are simply getting older, find they cannot enter, navigate freely, or live independently in the homes or apartments they own or rent. They are forced to leave their homes and communities, risk institutionalization, or spend thousands of dollars in home access modifications because houses or apartments with fewer than four dwelling units are typically not covered by any federal or state accessibility or universal design code. To compound the problem, the few accessibility standards that do apply to dwellings contain only minimum specifications and dimensions that do not address or reflect the real-world needs of many persons with and without disabilities. These risks are even more pronounced now, especially for older residents and persons with disabilities whose homes were damaged or destroyed.

In 2005, City of Dubuque officials and Gronen Restoration, Inc. invited the clinic to furnish technical support and consultant services regarding the major rehabilitation and adaptive reuse of the former Dubuque Casket Company. The building was converted into 36 affordable rental housing units. The complex also now includes the offices of a health care provider and a social service agency. The initial goal of the clinic was quite modest; we were to review the drawings and floor plans and tour the building to “see what we can do to go above and beyond the basic requirement for

handicap accessibility while staying within our [the developer's] budget." That mission was greatly expanded over the years and Washington Court became a singular project that spanned nearly every aspect and phase of the enterprise. The clinic's role ranged from the design and construction of the building to a post-occupancy study of its use.

This report documents the project's final phase, a research study to learn whether residents are aware of, use, or benefit from the universal design and accessibility features in the apartments and common areas. The overarching goal was to determine if universal design makes sense in the twenty-first century and enhances quality of life, safety, comfort, and convenience. We hope to add to the growing body of evidence demonstrating that universal design is valued by individuals, communities, and the public and private sectors.

We had several specific objectives. The first objective was to learn about residents' experiences living at Washington Court. We were interested in (a) what motivated residents to move to Washington Court, (b) whether the universal design features have added to residents' quality of life, and (c) what the residents would change about Washington Court. The results section of this report covers these topics. The second objective was to test our survey instrument's effectiveness in gathering information on accessibility and universal housing design more generally. The methodology section of our report covers these topics. We also wanted to design a survey that others could use based upon our experience in administering the Washington Court survey. The appendices include our suggestions for conducting your own universal design survey and a checklist to help organize and focus your efforts. The third objective is to encourage builders, developers, and funding agencies to use the survey results and recommendations and voluntarily incorporate universal design into residential, business, and commercial facilities. The fourth objective is to persuade state and local lawmakers and agencies to require minimum universal design features in publicly funded housing of all types or to provide incentives for builders, developers, and consumers to do so.

People often use words like accessible, adaptable, and universal design interchangeably; even we blur the distinction between these terms in several places in our report; however, each term has a generally accepted definition or is defined by law or regulation. For this report:

Accessible means that the residence meets the minimum requirements and dimensions of accessibility and building codes. These standards typically address minimum door widths, grab bars, the height of outlets, switches and controls, and other features primarily to address mobility, reach, and vision impairments. The most commonly used standards are found in the regulations to the Fair Housing Amendments Act of 1988, the American National Standards Institute (ANSI) Standards A117.1-1998, and the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Adaptable means that some features are designed to be modified or changed to address the needs of an individual with a disability and other

renters or owners as they age, without the need to hire skilled labor or make significant and costly structural changes. Additional wall backing in bathrooms and bedrooms will allow for future installation of grab bars. The space beneath cooktops and sinks can have adjustable shelves and doors that are hinged, recessed, or removable to allow for storage or for clear space, as the resident's mobility and other physical abilities fluctuate.

Universal design (UD) means incorporating features and design elements that venture beyond accessibility and codes to make homes, apartments, and the built environment usable by as many adults and children as possible. Universal design emphasizes visual appeal and usability; it does not focus on disability or the specific functional limitations of any individual and does not involve the use of adaptations or special designs. For example, Washington Court includes front-loading, raised washers and dryers and top-loading washers, no-step entrances, power-assist doors, and the switches for the kitchen fan, garbage disposal, and lights mounted at the front of the cabinets within easy reach.

II. The Washington Court Complex: The Building, Key Partners, Funding, and Building Codes

A. The Building

Washington Court is located at 1798 Washington Street in Dubuque, a neighborhood the developer describes as blighted, in need of reinvestment, and in desperate need of quality, affordable housing. The location puts the project in an area of the community allowing the residents easy access to neighborhood services including grocery, pharmacy, church, school, etc., without the necessity of an automobile. The building renovations involved the major rehabilitation and adaptive reuse of the former Dubuque Casket Company into 36 affordable rental housing units. Twenty-four of the units are one-bedroom units, and twelve of the larger units have two bedrooms. Nine of the units are designed and equipped to meet the needs of persons with mobility and sensory impairments (HC units), and, to the extent practicable, the facility includes universal design features to promote life-span living for persons of different ages and abilities. To rent an apartment at Washington Court, a tenant must have income that is at or below 60% of the area median income.

B. Development Team

Community Housing Initiatives, Inc., a nonprofit organization located in Spencer, Iowa, teamed with Gronen Restoration, Inc. to develop Washington Court. InVision Architecture of Sioux City and Jeff Morton of Dubuque were the project architects.

C. Funding

The development team secured funding from a variety of public and private sources to complete the project. The most significant sources are listed in Chart 1 on the next page.

Chart 1

Conventional Bank	\$ 200,000
IA Dep't Economic Development (HUD HOME pass-through)	800,000
City of Dubuque (HUD CDBG pass-through)	200,000
City of Dubuque (HUD Lead Paint Abatement Funds)	188,000
Iowa Housing Enterprise Zone Tax Credit Proceeds	177,878
Low Income Housing Tax Credit Proceeds	2,875,133
Federal Historic Rehabilitation Tax Credit Proceeds	906,794
Iowa Historic Rehabilitation Tax Credit Proceeds	613,141
Total	\$5,969,946

*D. Building Codes, Accessibility Standards,
and Universal Design Guidelines*

The housing complex includes 36 affordable apartments on the upper three floors and the Crescent Community Health Center and Project Concern, a social service agency, on the ground floor. To qualify for tax credits and be listed on the National Register of Historic Places in 2006, the award-winning project also had to retain or incorporate specific features and elements. The mixed-use and multifamily dwelling facility was built with certain tax credit and block grant funds, which required the architects and contractors to meet many and sometimes conflicting building code and accessibility standards. As a result, several rooms or spaces were subject to one or more construction standards.

To eliminate or reconcile differences, the project employed the standard that provided the greatest degree of access and usability. Universal design standards were developed by the University of Iowa Clinical Law Program from a variety of sources, including previous projects, Iowa Finance Authority inspectors, and other entities that are noted in the Washington Court Universal Design and Green Home Survey Checklist in the report's appendix.

Here is a select list of applicable codes and standards:

- 2003 International Building Code
- 2003 International Residential Code
- 1997 Uniform Code for Building Conservation
- Uniform Federal Accessibility Standards (UFAS)
- Americans with Disabilities Act Accessibility Guidelines (ADAAG)
- Fair Housing Act Accessibility Guidelines (FHAct)
- ANSI accessibility standards for public and common use areas
- Iowa Code Chapter 104A
- Iowa Department of Public Safety Rules: individual dwelling units 661 IAC 16.720

- Iowa Department of Public Safety Rules: reserved parking 661 IAC Ch. 18
- Iowa Department of Public Safety Rules: public/common use areas 661 IAC Ch. 16

III. The People of Washington Court

The primary emphasis of our report is on the people who live in the building, not the building itself. Understanding the target population—the residents in this case—is important in interpreting any data collected through a survey. Preliminary information about the population provides guidance in the early stages of survey design and later in revisions. Such was the case with Washington Court, where we designed our initial survey based on information we received about the income requirements, the number of standard and “handicap-accessible” units, and the number of tenants. We were later able to use that information in combination with more detailed data we obtained in the survey to assemble a portrait of the people of Washington Court.

To add detail to the data we collected about residents of Washington Court, we included some questions about the residents’ basic demographics. This part of our investigation included questions about residents’ living arrangements, income, and when and why they moved to Washington Court. So as to better understand residents’ responses to the main questions about the building, we also asked residents about their functional limitations, independence, need for assistance, and finances.

We also learned that the owners entered into an agreement with the Dubuque Visiting Nurses Association to deliver services to help residents with disabilities to live independently.

A. Basic Demographics

Even some basic demographic information about the residents of a building can provide clues about which design features to include in the building. For example, a basic understanding of the residents’ financial status and income level can help a landlord or building designer determine if a feature should be standard or if the resident could later absorb the costs associated with providing their own adaptive means. An example of this would be a low-income resident who is burdened by having to buy a step-stool to reach items in the kitchen and would otherwise save money, time, and energy if cabinets, storage, appliances, and controls were mounted within easy reach. Similar inferences can be drawn from other demographic information such as age and whether a person lives alone or with a roommate or spouse.

From data we received from the landlord, we knew the building housed 45 residents in 36 apartments, nine of which were designated handicap accessible units (HC units). Out of this population, we conducted surveys with 27 residents. Five residents only completed part of the survey, so we dropped their responses in our final analysis, which

resulted in our final sample of 22. Fifteen (15) of those residents lived in one-bedroom apartments, and seven lived in two-bedroom apartments. Only three respondents lived alone, whereas 19 shared their apartment with someone else. Furthermore, a majority of residents at Washington Court are single (63 percent single compared to 27 percent divorced or separated), while very few are married (9 percent). Most residents are under age 45 (63 percent), and only two respondents were over age 65 (9 percent). The residents of Washington Court are similar in age distribution to the greater Dubuque area, which has an average age of 38 according to the 2000 Census.

About 72 percent of respondents work, with 50 percent of residents working full time. In addition, 40 percent either attend school or plan to attend school in the near future. The building has off-street parking, and 68 percent of respondents report using a personal or family car for transportation. Additionally, one-third of respondents use public transportation regularly (32 percent).

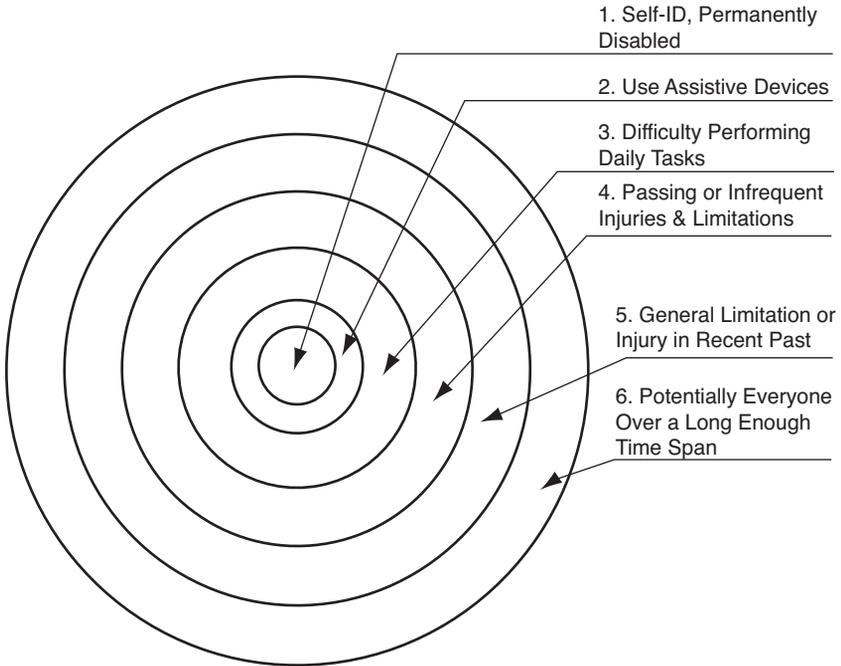
As previously mentioned, Washington Court is a subsidized housing project, and residents must meet specific income requirements in order to live there. Accordingly, we found that 23 percent of respondents receive Social Security retirement benefits, 14 percent receive Social Security disability benefits, 18 percent receive Supplemental Security Income, and at least 14 percent receive food stamps or other government assistance. We also found that 18 percent of residents make less than \$10,000 annually, 32 percent of residents make between \$10,001 and \$20,000 annually, and 23 percent make between \$20,001 and \$30,000 annually. Nobody reported earning over \$40,000 annually, though some individuals did not know or refused to disclose their income level.

B. Functional Limitations of Residents

Although functional limitation data about residents more easily translates into proposed building enhancements, it is also somewhat more difficult to capture. We included some questions about functional limitations in our survey because knowing about residents' functional limitations allows us to better understand why they may benefit from or value a particular accessibility or universal design feature. Put simply, this data provides an additional answer to the follow-up question "why" for each feature evaluation and response in the remainder of this study. However, functional limitation data is more difficult to obtain with simple pointed questions, in part because the definition of a functional limitation is highly subjective. Only a small group of people identify themselves as having some form of functional limitation, such as being permanently disabled.

Accordingly, it is best to think of functional limitations in a population as a series of concentric circles, with the self-identified functionally limited in the smallest central circle. The next set of people can be identified through questions about the use of assistive devices, such as grabbers, and ease of performing daily tasks, like doing laundry. But universal design

Figure 1
Levels of Disability



is supposed to take into account aging-in-place, passing injuries, fluctuating health, and functioning and permanent impairments. So an appropriate line of questioning involves asking if an injury developed while living at Washington Court or if it was a preexisting condition and whether the resident needed assistive devices on a daily or passing basis. Asking more general questions about whether a person has suffered an injury or been limited in their ability to perform daily tasks in the past six months, year, and five years will finally result in a more complete picture of residents' limitations and abilities. Essentially, over a long enough timeline, everyone will have had some period when they had some functional limitation, difficulty with stooping, bending, walking, seeing, hearing, etc.

Here is what we found. Some 41 percent of respondents informed us that they had some form of "functional limitation." Some residents with functional limitations live in non-HC units that were not equipped to address physical, sensory, or other impairments. We only interviewed six residents living in HC units, but interviewed nine residents with a functional limitation.

Only six residents responded "Yes" to "Do you have any functional limitations?" However, more responded "Yes" when the functional limitations

were more specific, such as the seven who responded “Yes” to “Do you have any trouble stooping or kneeling?” So, the total number of persons with a functional disability was determined by adding those who responded positively to the later questions about ability to the initial question about general functional ability. Most of those with functional limitations had problems stooping or kneeling (7 of 9, or 78 percent of residents with functional limitations), followed by trouble walking (6 of 9, or 67 percent), and then trouble reaching (5 of 9, or 56 percent). Four out of 22 respondents (18 percent) reported having difficulty with “activities of daily living,” and 18 respondents reported no problems with such activities (77 percent). Four respondents (18 percent) also reported that their functional limitation was “permanent or indefinitely recurring,” which means that their building evaluations will most likely not change due to a new betterment in their personal condition.

As a further measure of functional limitations, we asked respondents whether they needed assistance from others with personal care and daily activities both before and while living at Washington Court. Four respondents (18 percent) said they needed assistance of this sort both before and while living at Washington Court. Such assistance was most commonly provided by a family member, for four respondents, followed by a “home health care agency” for an additional two respondents (18 percent and 9 percent, respectively).

IV. Universal Design Features and Quality of Residents’ Lives

Outside of information about the residents themselves, we also sought out information as to whether universal design (UD) features improve the residents’ quality of life. We discovered that they are divided over the benefits of universal design. One group values universal design features, while the second is apathetic towards UD features. Residents who value UD notice the features, use them, and find them important. These residents would like additional UD features. On the other hand, residents who are apathetic towards UD have not noticed the features, do not use them, and are indifferent towards adding more UD features to the building. The ratio of residents who value UD and apathetic residents is almost one-to-one.

We considered the best method of administering the survey, including paper-based, web-based, phone, personal or group interviews, focus groups, and various other methods. Because we operate as a law firm, we did not have the resources or expertise of research firms needed for many of these methods. We opted to do structured telephone interviews. One of the things we learned was that it is both difficult and time-consuming to conduct such in-depth interviews over the phone, for both researchers and the residents of Washington Court. In addition, it is difficult, if not impossible, to develop perfect questions that elicit the information sought. In retrospect, we were quite ambitious; studies of this scale should be left to

firms with the time, resources, and expertise to fully evaluate and conduct a survey of this magnitude.

Many of our methodology choices were informed by three constraints. First, we were constrained by funding. Second, we were constrained by our research team members' relative lack of experience. Third, we were constrained by federal regulation governing the way public institutions use humans in research studies.

Our potential sample included all of the adult residents of the Washington Court Apartment building. We chose to survey Washington Court residents because we helped develop the building and have strong relationships with the building's owner and the city of Dubuque. The greatest methodological weakness of the survey was small sample size. The scope of the survey was limited to residents of Washington Court, which is a relatively small pool. A total of 44 adults lived at Washington Court during the weeks we conducted the survey. Eight adults lived in HC units, and 36 lived in non-HC units.

Our study provides a snapshot of the residents at Washington Court in the fall of 2008. As a result of only interviewing 22 respondents, our findings are not necessarily representative of the population at large. However, what we did find implies that universal design gives Washington Court a long-term competitive advantage over other housing for tenants who receive Housing Choice Vouchers (Section 8 vouchers) or other subsidies because their income is at or below a certain percentage of the area median income (60% for Washington Court).

V. Competitive Advantages of Universal Design in Affordable Housing

Washington Court stands out from other affordable housing because it is new and because of its universal design features. Residents who value UD chose Washington Court over other subsidized housing options in part because of these features. Residents who are apathetic towards UD chose Washington Court because it is a new building, regardless of the UD features. Thus, Washington Court will maintain its competitive advantage over other federally subsidized housing projects and other complexes even as the building ages because it will continue to attract residents who value UD features even when the building is no longer new.

Developers can surpass the Washington Court model in three ways to increase their competitive advantage in the affordable housing market. First, developers can add features that all residents want, regardless of whether they value or are apathetic towards UD. The features include:

- Security features, such as a secured front entrance with a security code, security cameras throughout the building, and peepholes in apartment doors.
- An open layout with large living space and large bedrooms.

- Windows residents can easily open (especially in rehabbed historical buildings).
- A walk-in closet or utility room for storing large items.
- Extra lighting throughout the unit, including an overhead light in every room.
- Energy-efficient appliances.
- Under-cabinet lighting in the kitchen.
- Rounded countertop edges in the kitchen and bathroom.
- Lots of flexible workspace in the kitchen, including countertops at varying heights and cutting boards that pull out from underneath the countertop.
- A side-by-side refrigerator and freezer with pull-out shelving.
- A full-length mirror mounted on the bathroom wall.
- A washer and dryer in each apartment.
- Alternatively, if there are laundry rooms, counters at varying heights for folding clothes.
- A buzzer at the front door to buzz guests in.

Second, developers can add discrete features that will attract residents who value UD without deterring residents who are apathetic towards it. Developers should add these features throughout the building and in every unit to attract residents who value UD. Many of these features are also relatively inexpensive. They include:

- Clear space under the sink and cooktop.
- Backlit, rocker-style light switches with dimmers mounted lower than usual.
- Electrical outlets and cable jacks mounted higher than usual.
- A thermostat with a large digital display mounted lower than usual.
- Switches for the garbage disposal, exhaust fan, and cooktop light mounted on the front side of the counter instead of at the back.
- Lever-style door handles throughout the building instead of round door knobs.
- Adjustable-height shelves and clothes rods in the closets.
- Bi-fold closet doors.
- In-wall backing for bathroom grab bars pre-installed so that grab bars can be added upon request.
- Nonslip flooring in the bathroom.
- Front-loading washers and dryers.
- A ramp at the front entrance where a no-step entrance is impracticable.
- Front entrance doors that open automatically.

Finally, developers can add obvious UD features in select apartments. Even though a few of these features might be a bit more expensive to install, there is a distinct market for them. Demand for these units will continue even after the building ages because residents who value UD will seek these units. These features are in addition to those listed in the last section and include:

- Upper kitchen cabinets mounted lower than usual.
- Oven and dishwasher mounted off the ground.
- Grab bars in the bathroom already installed.
- A roll-in shower with a shower seat.

VI. Future Directions and Research

When we embarked on the Washington Court research project, our goals were extremely ambitious. The initial team asked whether and how living in a universal design apartment could change and benefit people's lives. We had hoped to evaluate the effectiveness of certain features and amenities. The research team posited that UD resulted in increased social, educational, and employment opportunities; decreased reliance on home health care, personal assistance services, and public benefits; and allowed for greater independence. The grand scheme was to interview tenants every six months for several years to record and evaluate their income, benefits, third-party assistance, social activities, and functional abilities. In retrospect, these objectives were impractical and far beyond the resources, budget, and expertise of our clinical law program, which operates as a law firm.

That said, we believe that our research supplements the existing data surrounding residential universal design and might be used to spark discussions and contribute to policy debates about multigenerational and affordable housing. From our perspective, the project is a success if stakeholders use the report, conduct-your-own survey, and universal design checklist to evaluate living environments and share their experiences with others.

All limitations aside, the report furnishes a snapshot of the people who lived in the apartments in October 2008 and chronicles their impressions, experiences, and opinions. Additional research will be required to develop a more detailed portrait of people at Washington Court and people who live elsewhere. We are fairly certain that other organizations are conducting more rigorous formal research studies; we look forward to receiving their findings and insights. This section summarizes ongoing and potential Clinical Law Program projects and gives suggestions for how to better examine universal design in different contexts.

A. Expand the Washington Court Housing Survey

A more elaborate survey is needed to supplement and interpret our original findings with a larger sample size. The study population could include all residents of subsidized housing units in Dubuque. Or researchers could study tenants in larger apartment complexes in other cities. We hope to replicate and expand upon our findings and confirm that there are two distinct groups of residents, those who value UD and those who are apathetic toward it. Refining our methodology will hopefully result in statistically significant and generalizable findings, particularly about people who have functional limitations and those who do not.

B. Conduct a Matched Pair Analysis of a Universal Design and Standard-Built Single-Family Home

The REALTOR® Homes For Our Future is a homeownership project in Iowa City to build and showcase an affordable, single-family home that incorporates universal design, green, and sustainable building practices. The home is based on a standard model the local developer routinely constructs. We modified the original design, floor plan, equipment, heating systems, and other features to incorporate universal design (and green features, such as geothermal heating). The buyers have agreed to be interviewed several times after the sale to help us evaluate the usability, desirability, and cost-effectiveness of the modifications. We also plan to study the specific and opportunity costs of universal design. The project may decide to test using the conduct-your-own universal design and green home survey and checklist we developed.

C. Evaluate Universal Design in Historic Preservation

Step by Step Inc. and the City of Dubuque asked us to help redesign, rehabilitate, and transform an 1890s brownstone into seven universal design apartments and a community kitchen for use by persons with disabilities. We secured permission from HUD to grant priorities to income-eligible applicants with qualifying disabilities. These applicants must use mobility aids and need the UD and accessibility features in the building, such as the elevator, power-assist doors, top-loading microwave, motion-sensor lighting, roll-in or low-threshold showers, etc. They are considering using the survey and checklist we developed or enlisting our help in conducting the study. The city will review its building codes and contracts and determine if it will require minimum UD features and standards in all publicly funded housing projects.

D. Universal Design in the Workplace and Commercial Facilities

Do businesses and employees benefit from universal design? And, if so, what should the design and construction standards be? These questions are unresolved and, for the most part, have largely been ignored by the private sector to date. Gronen Restoration requested that we review the drawings and floor plans for the adaptive reuse of the historic Roshek Building in downtown Dubuque, which was formerly a department store. Future tenant IBM intends to open a technology service delivery center that is LEED-certified and includes UD. Another opportunity arose recently in Dubuque; the city is revitalizing its Warehouse District for mixed residential and commercial use and is interested in incorporating UD as it expands. In a related vein, The Global Universal Design Commission is researching and developing voluntary consensus standards for buildings, products, and services to guide corporations and government entities in the creation of barrier-free commercial facilities.

E. Developing a Model to Record, Track, and Measure Project Costs

Documenting the costs associated with universal design has been problematic for just about everyone involved in housing. On-site change orders, purchase orders and receipts, bid books, and itemized accounts are often misplaced or archived quickly as one project ends and another begins. To complicate matters, the price of hardware, cabinets, appliances, and fixtures fluctuate; vendors go out of business or rename their products; and many label items as ADA-approved even though no one certifies or approves products based on complying with ADA Accessibility Guidelines. Hard, accurate, and reliable cost information is hard to find. A focal point of future research should be the creation of a system to record, track, and measure project costs.

F. A Retrospective Examination of Iowa City's B Street UD Home

In 2001, the city teamed up with a local homebuilder, the legal clinic, and community organizations to design and build a single-family home with basic and state-of-art features, including a motorized, adjustable kitchen sink. One of the owners has lived there since he bought the house in 2003; he has opened the home to the public and clinic students every year. With his permission and adequate resources, we will inspect and photograph the house to find out how well the appliances, cabinets, hardware, and fixtures have held up to daily use. We have videos and pictures of the home to conduct a "before and after" assessment to supplement personal interviews. Information, floor plans, and pictures may be found at <http://www.uiowa.edu/legalclinic/>.