

IPRO 324 Final Report

Fall 2006

**Disaster Recovery:
Do-It-Yourself Home Building**

Advisor: Frank Flury

0.1 Introduction.....	Pg. 3
0.2 Background Information.....	Pg. 3
0.3 Purpose.....	Pg. 6
0.4 Research Methodology.....	Pg. 6
0.5 Assignments.....	Pg. 8
0.6 Obstacles.....	Pg. 9
0.7 Results.....	Pg. 10
0.8 Recommendations.....	Pg. 10
0.9 References.....	Pg. 11
0.10 Acknowledgements.....	Pg. 17
0.11 Team Member Information.....	Pg. 18

0.1 Introduction

I PRO 324, Disaster Recovery: Do-It-Yourself Home Building Training is focused on designing a building manual to aid disaster victims in building new buildings. Over the course of this semester, the team focused expressly on aiding an artist community known as New Harmony, located in Hancock County, Louisiana. The buildings created this semester will act as a residence, a studio, and a gallery in order to meet the needs of our clients. However, this design will be able to meet the needs of not just this artist community, but also any community expressing need in the future. The house will at the bare minimum consist of a multipurpose room, a kitchen, and a bathroom; and it will cost approximately \$15,000 - \$20,000. This is a very reasonable sum of money considering the cost of building a house right now, but the team is aware that some families are not fortunate enough to have a savings of \$20,000 when these unexpected disasters occur. For this reason, it is an objective of the team to obtain funding for such individuals from large corporations and charity groups. The team will also pave the way for I PRO 324 to become a not-for-profit organization, if the team should choose to do so in the future. This step will only be taken if the team determines that it is impossible to receive donations without achieving not-for-profit status. Another objective of I PRO 324 is to create a marketing scheme for introducing our design to potential clients and donors. This will be done through the creation of brochures, a website, and the creation of a mock-up of our design.

0.2 Background Information

A. Clientele: Our projected client base will be predominantly for those that are homeless due to natural disasters. We will provide them affordable structures that they can customize to fit their needs. The structures would be flexible and could be used for a variety of purposes from single-family residences to community buildings such as schools, churches etc. Our focus this semester was on the New Harmony artist community, located in Hancock County, Louisiana. We are currently obtaining specific details

about a new client; however, it is known that Hurricane Katrina left the community without homes, studio workspaces, or galleries to sell their artwork.

B. Sponsorship: This semester, we briefly researched potential sponsors who would best fit the needs of our project. Some of the potential sponsors includes, but is not limited to, ace hardware and companies of the like, major corporations such as Motorola, and local smaller corporations. The New Harmony artist community is currently working with a fundraiser that will assist us in funding this particular project. Next semester, the new IPRO team should go on to find more sponsors.

C. Our IPRO is slightly similar to Habitat for Humanity in that our housing plan is targeted to those that cannot afford adequate housing. However, we differ in that we are natural disaster specific, and our main goal is to provide victims with the opportunity to build their structure almost entirely on their own, ensuring a more timely process in getting back on their feet. We envision creating a model that is simple enough that a novice could practically build it themselves, yet durable enough to last permanently if the client wishes.

D. Under the direction of Professor Frank Flury, a previous team of students outside IIT attempted to build something similar to what we intend on doing. In 2004 Professor Flury and a group of students from Alabama built a structure for the victims of a natural disaster. Since that was very successful Frank proceeded to make two other structures for various other places and with various other students. One such place was Lynn Meadows Discovery Center. The volunteers of this project were IIT students who were doing this without school credit.

E. Other than the obvious reason of wanting to help disaster victims, there were many things that influenced Frank to create this IPRO. For starters, he wanted architect students as well as students from other disciplines to experience something more hands on than what they were generally accustomed to.

He saw the excitement of the kids who previously worked on the projects and he wanted to bring that excitement to the students at IIT. After the successful completion of the Lynn Meadows Discover Center project he felt that many more successes could be done and he knew IIT students would be up to the challenge.

F. As with any business, may be it profit or non-profit, certain ethical considerations must be considered. For example, at this point we are a small organization. Where do we go first with our plan? There are natural disasters happening everywhere, some more publicized than others. Where do we begin? Can we make the call that some places are more important to rebuild than another? We obviously cannot go to x amount of places at once so how do we make the call which place takes precedent?

G. Aside from ethical considerations there are cultural considerations we must make as well. Some of the places we may go to in the future may have certain cultural differences that we must take into account. We simply cannot assume that one standard will be applicable to all places. As our IPRO progresses we will figure out ways to cater to as many people around the world as possible.

H. The Business costs are the materials and any labor that may not be able to be completed by a novice as well as inspections and permits. For Societal costs we must be conscious of the time and energy that it takes to create a building.

I. Our plan for this semester was broken into two parts. The business team took care of finding investors, making a business plan to bring to investors, as well as creating a marketing scheme that will get our business off the ground. Our design team set out to create a design, locate and figure out materials, discover the best construction techniques and coordinate the construction of the model of our proposed building.

0.3 Purpose

The objectives of this group was to design a simple but adequate floor plan, create a manual illustrating this design, and create a booklet to pass out to potential sponsors and clients.

0.4 Research Methodology

A. The primary problems

- Design of lasting and functional yet inexpensive buildings for disaster victims.
- Become a not-for-profit organization for the following purposes:
 - Acquire donations from large corporations (e.g. Lowes, Home Depot, Target, etc)
 - Acquire other aid from various groups including:
 - on site professionals
 - building materials
 - local support

B. In order to solve these problems, IPRO group is divided into two groups: the Design team and the Business team. The Design team will handle the overall design of the building. This entails creation of plans, a display of the design, a full-size mockup of the building, demonstrating how the structure is constructed, and a manual that illustrates and instructs how to assemble the building. The Business team will be doing research into the viability of becoming a not-for-profit organization. This entails studying the procedures into becoming a 501(c)(3) legal tax-exempt not-for profit organization independent of the school. This is necessary due to the fact that most corporations will not donate to institutes (such as IIT) despite the fact that they are technically not-for profit. This is because donations to institutions like IIT will not be tax deductible. The business team will also be responsible for the creation of an official website and pamphlets/brochures in order to market the final product to the general public and attract possible partners and donors.

Our goals as an IPRO are as follows: For the Business team; answer the question whether or not an IPRO can form a not-for-profit group independent of the school with detailed instructions on how do so if possible. For the Design team, they will finalize the overall design and functionality on paper, producing a manual and a full scale mock up of the final design or a scale model demonstrating the final design.

C. The testing of possible solutions to our problems will be fairly straightforward yet rather difficult to accomplish. For example, for the design team to fully test their model, a full-scale mock-up will be built in order to demonstrate the real life feel of the design. The intention is that a future IPRO, or group of willing students, will be able to fully implement our project in the artist community. There is the intent to send a small number of students to Louisiana to meet with the New Harmony community and establish potential sites for the proposed structure. This will provide extremely valuable information regarding the specific needs of this community and will assist the design team in making design decisions. As for business, testing of solutions to the question of whether or not an IPRO can become a not-for-profit by contacting IIT faculty and staff (including the IPRO office itself, various administrators at IIT or lawyers involved with IIT) Contacting current not-for-profit organizations and others specializing in setting up not-for-profit organizations (e.g. the Offices of the Secretary of State, independent lawyers, etc) will also be extremely helpful.

D. The results of testing these solutions will be documented differently for each team. The business team will document its results via text documents on the law pertaining to not-for profit and forms and checklists of what needs to be done to become a not-for profit. In terms of questioning other sources, if advice, aid or answers from outside sources are received, the notes taken from the conversation, the emailed response and any other hard or soft copies of responses received from the source will be documented and stored for future reference. The design team will work individually as well as together to produce drawings and models that will be discussed and revised at IPRO meetings some of these

drawings and images, and the continuous development of the manual. These documents should be scanned and placed in the group's folder at iGroups.

E. Analysis of the test results will occur at every meeting of the IPRO. In terms of the Business team, analysis of test data will be the discussion of whether or not the data/input we received helps or hinders our purpose and how we should respond to these results. If the data helps, we figure out what our next step is to take advantage of this data. If it hinders our mission, we will discuss how to fix the problem if it can be fixed and decide what direction to take if it can't. For the Design team conversation about individual and group design drawings and images will be discussed and evaluated and then added or removed from the project.

F. The tasks involved in generating IPRO deliverables are the division of work amongst specialists in the group (e.g. assigning the design of the website to someone specializing in computers rather than by random) and dividing the remaining work evenly amongst the entire group. A set period of time in advance of the deadline, members will present their initial product to the group for peer editing, allowing everyone to have the opportunity to review mistakes and or critique the members work. Scheduling of tasks will be handled by each team's leaders, and will be reviewed and updated at each IPRO meeting.

0.5 Assignments

Business team leader:
Pete Smagur

Design team leader:
Kelleny Allen

Minute Takers:
Melissa Gandhi, Melissa Lemons, Christina Barrett, and Frank Carello

Master Schedule Maker: Melissa Gandhi

This member is responsible for collecting schedules from all the team members and developing a master schedule, which tells the team when members are available and how to contact them.

Project Plan:

Business team primarily with design parts submitted by Design team.

Midterm Report:

Business team primarily with design parts submitted by Design team.

Poster:

Design team primarily with text supplied by Business team

Brochure and Abstract:

Christina Barrett, Pete Smagur, Melissa Gandhi, Melissa Lemons, Jeremy Saulog, Veronica Hernandez, and Amanda Hallberg

Web Site:

Christina Barrett

Final Report:

Business team

Business Plan:

Executive summary: Melissa Lemons

Background: Melissa Gandhi

Clientele and Sponsors: Jeremy Saulog and Julian Beltran

Features and Benefits: Design team

Competitive Analysis: Pete Smagur

Timeline: Pete Smagur

Funding: Christina Barrett and Melissa Lemons

Future Plans: Professor Flury and Business team

Team Information: Christina Barrett

0.6 Obstacles

The biggest difficult facing the business team was knowing exactly how much the house would cost since we have yet to determine minute details such as exactly what materials are going to be used to construct this house.

The design team biggest difficulty was creating a well-designed and sturdy building that could be assembled by a novice using cost effective materials and construction techniques. In addition, like most business of this scale, there are quite a few business costs that we must incur.

Some of the additional obstacles including lack of communication between the two subgroups and the constant change of objectives.

0.7 Results

To date, we have finalized the design of a modularized structure, we are in contact with one solid client; New Harmony. In addition, we have done research on possible donators and clients, and we have also created ways to inform these clients and donors on who we are and what we want to provide.

0.8 Recommendations

The main goal of next semester should be to actually build the structure that we have designed. In addition, it would be beneficial if the next business team seeks to make IPRO 324 a non-for-profit organization and obtain the necessary permits and follow regulations for the building. Third, we hope that the next IPRO team furthers research into finding potential investors and donors. Lastly, we would like further contacts to be made to new client.

0.9 References

America's Most Philanthropic Companies

Company	2001 Cash Donations (As A % Of 2000 Income)	2001 Cash-Giving (\$mil)	2000 Operating Income (\$mil)
Target (nyse: <u>TGT</u> - <u>news</u> - <u>people</u>)	2.51%	\$85.8	\$3,418
Aetna (nyse: <u>AET</u> - <u>news</u> - <u>people</u>)	1.94	21.5	1,104
J.C. Penney (nyse: <u>JCP</u> - <u>news</u> - <u>people</u>)	1.58	14.0	885
Kroger (nyse: <u>KR</u> - <u>news</u> - <u>people</u>)	1.56	39.0	2,497
Bank One (nyse: <u>ONE</u> - <u>news</u> - <u>people</u>)	1.46	40.2	2,762
Best Buy (nyse: <u>BBY</u> - <u>news</u> - <u>people</u>)	1.31	9.4	720
Johnson & Johnson (nyse: <u>JNJ</u> - <u>news</u> - <u>people</u>)	0.98	78.6	7,992
Lockheed Martin (nyse: <u>LMT</u> - <u>news</u> - <u>people</u>)	0.98	25.4	2,582
Boeing (nyse: <u>BA</u> - <u>news</u> - <u>people</u>)	0.98	48.7	4,996
Wal-Mart Stores (nyse: <u>WMT</u> - <u>news</u> - <u>people</u>)	0.94	116.5	12,392

Top Corporate Cash Donations

Company	2001 Total Cash-Giving (\$mil)	2000 Operating Income (\$mil)	2001 Cash Donations (As A % Of 2000 Income)
Ford Motor (nyse: <u>F</u> - <u>news</u> - <u>people</u>)	\$137.6	\$25,473	0.54%
Philip Morris (nyse: <u>MO</u> - <u>news</u> - <u>people</u>)	122.3	16,396	0.75
ExxonMobil (nyse: <u>XOM</u> - <u>news</u> - <u>people</u>)	119.8	33,555	0.36
Wal-Mart Stores (nyse: <u>WMT</u> - <u>news</u> - <u>people</u>)	116.5	12,392	0.94
SBC Communications (nyse: <u>SBC</u> - <u>news</u> - <u>people</u>)	99.2	20,491	0.48
Bank of America (nyse: <u>BAC</u> - <u>news</u> - <u>people</u>)	95.7	19,079	0.50
J.P. Morgan Chase (nyse: <u>JPM</u> - <u>news</u> - <u>people</u>)	93.6	14,960	0.63
Intel (nyse: <u>INTC</u> - <u>news</u> - <u>people</u>)	91.1	15,339	0.59
Target (nyse: <u>TGT</u> - <u>news</u> - <u>people</u>)	85.8	3,418	2.51
Verizon (nyse: <u>VZ</u> - <u>news</u> - <u>people</u>)	82.6	25,226	0.33

Habitat for Humanity

Product Sponsors

Whirlpool Corporation

Since 1999, Whirlpool Corporation has donated a refrigerator and range to every Habitat home built in North America. This commitment continues with appliance donations to every home built during Home Builders Blitz and Operation Home Delivery. To date, Whirlpool Corporation has contributed more than 56,000 appliances accounting for more than \$25 million.

Whirlpool Corporation has contributed more than 56,000 appliances since 1999.

Dow is donating blue board insulation to every Habitat home built during the Home Builders Blitz 2006.

Dow

Dow has been a partner since 1987 and will provide Dow Styrofoam insulation products to Habitat homes.

Ferguson

Ferguson has partnered with Habitat to provide toilets and sinks to each house built during the Home Builders Blitz.

Kohler

Kohler has partnered with Habitat to provide faucets for each house built during Home Builders Blitz.

Yale

Yale will provide the interior and exterior locksets for all Habitat homes built in the United States and Canada.

Square D

Square D has partnered with Habitat to provide load centers and circuit breakers for all homes built in the United States, Canada and Mexico.

Valspar

The Valspar Corporation has made a commitment to donate paint for all Habitat for Humanity affiliates in the United States.

Hunter Douglas

Hunter Douglas has been a partner since 1992 and through its generosity has provided more than 100,000 custom window coverings to over 20,000 homes in the U.S. and Canada. The company donates and delivers its finest custom-made products for the privacy rooms of all new and rehab Habitat home construction and at cost for all other rooms of these homes. In addition, Hunter Douglas employees and customers volunteer thousands of hours each year with local Habitat affiliates nationwide.

Larson Manufacturing Company

Larson has been a partner with Habitat since 1992 providing storm/screen doors for Habitat homes built in the United States.

Rinnai Corporation

Rinnai Corporation will donate tankless gas-powered water heaters to every house built during Home Builders Blitz 2006.

MASCO Corporation

MASCO has been a partner with Habitat for Humanity over the past five years, donating over \$2.3 million in funding and products as well as employee volunteer hours to build homes in the U.S. and abroad. MASCO will donate bath tub/shower units, vanity cabinets, bathroom accessories, and a whole house gas shut off valve to every house built during the Home Builders Blitz 2006.

National Arbor Day Foundation

The National Arbor Day Foundation in partnership with Arm and Hammer will be providing three trees per house in the Home Builders Blitz 2006.

National Housing Endowment

The National Housing Endowment has provided funding for the Home Builders Blitz 2006.

Builder Partners**Centex Homes**

In the past five years, Centex Homes has built and donated over 130 Habitat houses. Centex also plans to build 15 homes during the Home Builders Blitz 2006.

KB Home

As a new national partner with Habitat, KB Home will build 11 homes during the Home Builders Blitz 2006 in locations across the country.

Stephen E. Cramer & Associates, LLC

Major Gift, Capital, Endowment Development/Campaign

A fundraising campaign (Major Gift, Capital, Endowment, Comprehensive) is a complex undertaking and a strategic process that calls for a board-directed planning linkage (Strategic Plan) as a foundation; a solid needs assessment and well thought out case for support; top-level committed leadership and volunteers; a significant number of major gift prospects; a strong plan, and competent, professional direction for executing the plan on time and on target.

Cramer & Associates can guide your institution or organization through each step of this process and approach by providing consulting services that will assure success in funding your objectives and increasing organizational capacity building.

It is essential that your organization has completed its strategic planning or is currently in a multi-year strategic plan. If not, we can assist you with this first essential step.

Your major fundraising campaign needs to evolve out of your Strategic Plan – most Major Gift/Capital/Endowment donors will want to know the justification for their significant investment in your project and will ask if the board has done a thorough job of thinking through the organization's future and, therefore, its need for major funding. The Strategic Plan is the document and process you can point to with confidence in answering this and all the other future questions for the rationale and benefit of funding.

Once a decision is made by the board to consider a fundraising campaign, it will be important to test your case for support and to assess your readiness for such an undertaking. **Cramer & Associates'** market assessment and planning tool is the Capital Campaign Planning Study & Leadership Assessment™. Such a Study & Assessment provides objective and candid feedback from your community and key supporters concerning your institution or organization and its proposed plans. It provides the information needed to put together a solid campaign plan and identifies potential campaign leadership. It also evaluates the potential leadership's capacity to lead the undertaking and provide financial support as well as identify and provide access to other key supporters.

With a validated Study & Assessment in hand, your organization may be ready to move forward with putting a campaign plan together and making the decision on how to staff such an undertaking either with organizational staff or outside counsel.

Following the Study & Assessment and board decision to conduct a campaign, there are 10 important areas of planning that will require the organization's or institution's attention:

1. Campaign direction with counsel
2. Campaign strategy and plan
3. Campaign organization
4. Campaign budget
5. Campaign leadership
6. Campaign communications and awareness building
7. Prospect identification and cultivation
8. Solicitation strategy
9. Campaign public announcement
10. Proper follow-up

IIT LENDS A HAND



In June, IIT Hurricane Katrina relief efforts long in the making were realized when Assistant Professor of Architecture Frank Flury and 14 of his students assembled a 1,000-square-foot activity center for members of the Gulfport, Miss., organization, Lynn Meadows Discovery Center. Flury and the students designed and constructed the structure, largely on IIT's campus, and transported it to Gulfport for on-site assembly. David Baker, vice president for External Affairs, joined Flury and the

students in Gulfport on June 30–July 1 to help with finishing the building and to attend the ribbon cutting. "I was amazed at the outpouring of goodwill and appreciation from both the staff of the Lynn Meadows Discovery Center and the families of the children who will use the new multi-purpose center," Baker says. "Frank Flury and our architecture students helped create a recovery miracle amidst the devastation of Hurricane Katrina."

0.10 Acknowledgements

We would like to thank the follow people who helped us throughout the semester:

Klem Penue – Klem was the first person who got us in touch with the New Harmony community. In the beginning of the semester, he spoke to us, via teleconference, telling us all about what the current status is there. Later on, he introduced us to Ruth to further assist us.

Ruth Thompson – Ruth was in charge of the New Harmony art's community. She acted as the liaison between our IPRO and the clients who were already based in New Harmony.

0.11 Team Member Information

<p>Professor Frank Flury</p> <p>Advisor</p>	<p>Kelleny Allen</p> <p>Team: Design Major: Architecture Skills and strengths: Dreamweaver, Microsoft Office, Adobe Suite, CAD, and 3d Max Experience and Academic Interests: 3D animation project, Large scale model, Personal Website, Marketing, and intern at OZ Architecture Firm.</p>	<p>Frank Carello</p> <p>Team: Design Major: Architecture Minor: Construction Management Skills and strengths: Freehand drawing, Isometric and perspective drawing, model building, 3D modeling in CAD, Photoshop and Illustrator CS, AutoCAD 14R through AutoCAD 2007. CAD drafting, Photoshop and Design. Experience and Academic Interests: Works part-time at Ridgeland Associates Inc, an Architecture Firm.</p>
<p>Lukasz Dakowicz</p> <p>Team: Design Major: Architecture Skills and strengths: Carpenter, Furniture builder, AutoCAD, 3Ds MAX, and Model building. Experience and Academic Interests: Craftsman for 7 years</p>	<p>Amanda Hallberg</p> <p>Team: Design Major: Architecture Minor: Psychology Skills and strengths: Building design, graphic presentation, and communication. Experience and Academic Interests: Intern Architect interested in the link between individual and group psychologies and the built environment.</p>	<p>Veronica Hernandez</p> <p>Team: Design Major: Architecture Skills and strengths: Certified in Architecture Technology A.A.S and Computer Aid Design. Intern Architect, mathematics, research, drafting, designing, and graphics. Experience and Academic Interests: Experience in Retail Management, and construction documents and any matters concerning Architecture. Interested in pursuing a Master in Architecture and Structural Engeering and Design Build projects (hands on training).</p>

<p>Sabine Kollwitz</p> <p>Team: Design Major: Architecture Skills and strengths: Freehand drawing and Analyze critically design. Experience and Academic Interests: Sociological impact of Architecture</p>	<p>Jimmy Rotella</p> <p>Team: Design Major: Architecture Skills and strengths: Computers: hardware and software. Is hard working, goal oriented, quick learner, easy going and friendly. Experience and Academic Interests: Work at an architecture firm. Has worked with computers and software for many years.</p>	<p>Christina Barrett</p> <p>Team: Business Major: Computer Science Minor: Business Skills and strengths: Proficient with Microsoft Office, Microsoft Money, Paint Shop Pro 7, Print Artist 8, and Java. -Familiar with Access, Adobe InDesign, Unix, C, and C++ Experience and Academic Interests: Built a small loft, a pumpkin catapult, and a trebuchet. Interested in any type of multimedia, created a PowerPoint similar to a web site and one similar to a small cartoon. Helped plan and create an IIT Yearbook.</p>
<p>Julian Beltran</p> <p>Team: Business Major: Mechanical Engineering Skills and strengths: Profficient with AutoCAD, Pro-E, and Microsoft Office. Is a hard worker, a reluctant leader at times, hates to lose, hates having to compete with something not up to par, and mentally prepared for IPRO Day. Experience and Academic Interests: Worked at an internship over the summer at Zebra Technologies as a design enginneer. Because of that, he knows how imporatanant it is to minimize costs of materials and labor.</p>	<p>Susanna Duecker</p> <p>Team: Business Major: Architecture Minor: City and Regional Planning Skills and strengths: Architectural and business, pr, and communications. Can do quick and critical analysis of situations and is able to find innovative solutions. Is a good communicator/facilitator. Has also studied economics for two semesters. Experience and Academic Interests: Interested in urban studies, sociology, psychology, and the world.</p>	<p>Melissa Gandhi</p> <p>Team: Business Major: Political Science (Pre-Law) Minor: Philosophy Skills and strengths: Fast typer and good at researching, writing papers, and financial proposals. Has a background in financing and took an accounting class. Experience and Academic Interests: Interested in Political aspects and social aspects.</p>

<p>Melissa Lemons</p> <p>Team: Business Major: Aerospace Engineering Skills and strengths: Technical report writing and analysis using excel. Is studious and hardworking. Experience and Academic Interests: Interested in aeronautics. Has experience working with Lockheed Martin with military GPS satellites.</p>	<p>Jeremy Saulog</p> <p>Team: Business Major: Aerospace and Mechanical Engineering Skills and strengths: Proficient with AutoCAD and Microsoft Office. Is a fast learner and hard working. Experience and Academic Interests: Aerospace and Psychology</p>	<p>Peter Smagur</p> <p>Team: Business Major: Civil Engineering Skills and strengths: MS Project, Excel, Word, Power Point, Access and CAD. Has a strong organizational leadership skill. Experience and Academic Interests: Professional experience managing installation and construction projects. Professional experience in timber construction. Classroom and professional experience estimating construction costs. Experience working with Habitat for Humanity</p>
--	--	--