DOE/CS/20203-T1

0 H

Do not remove
from file

MASTER

M+R
F-1696
8-2

~~CS 21696~~

PRELIMINARY BUILDING-DESIGN
COMPETITION EVALUATION

T.O. 6

Submitted

by

Donovan, Hamester & Rattien, Inc.
1055 Thomas Jefferson St., N.W.
Washington, D.C. 20007

AC03-48 CS 20203

December 16, 1977

dhr donovan, hamester & rattien, inc.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

donovan, hamester & rattien, inc.

1055 Thomas Jefferson St., N.W., Suite 414, Washington, D.C. 20007 (202) 337-6580

December 16, 1977

Memorandum

To: Dr. Melvin Chiogioji

From: Steve Rattien, Joel Rosenblatt, Robert Gordon, Jeffrey Schut

Subject: Feasibility Study on Design Competition

Attached is the initial feasibility study which you requested on whether or not design competitions should be considered as a possible policy tool and programmatic option for Building and Community Systems and the Department of Energy. It is our conclusion, as a result of our work to date, that design competitions are, in fact, a feasible and desirable option. They do, however, require a great deal of planning for their implementation. Moreover, they require, in order to be effective, a great deal of follow-up work and coupling with other policy tools to make sure that the objectives chosen for a particular design competition are, in fact, achieved.

The materials included in this study are meant to give you some sense of the complexities involved in selecting a design competition option, structuring a design competition program, and developing an effective follow-up program. The materials, while self-explanatory, will be most useful to you after we have had a chance to discuss the document with you.

We look forward to meeting with you at your earliest convenience after you have had a chance to study these documents and raise questions with respect to our conclusions.

DISCLAIMER

This book was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

JHS

TABLE OF CONTENTS

	<u>Page</u>
Introduction	1
Major Conclusions	3
Recommendations	4
Historical Overview--Lessons Learned . . .	5
Identification of Program Structure Considerations	12
Illustrative Example	21
Appendices	

Introduction

At the request of the Division of Buildings and Community Systems (BCS) and in fulfillment of Task 1 of this contract we have performed the following:

- evaluated the feasibility and potential of building design competitions as possible public policy tools to stimulate and promote energy conservation in building design, construction, and management;
- identified the key factors that must be considered in designing the competition and the elements necessary as the basis for formulating programmatic options; and
- developed a strategic plan and methodology for accomplishing the next tasks in the project.

This paper, which represents the first phase of the design competition planning process, was prepared to quickly surface the important issues and to act as the basis for discussion and further direction. It examines the feasibility of using design competitions as public policy tools and attempts to set the guidelines for the program and to determine the major parameters that will be examined in greater depth. It also identifies major pitfalls or barriers in program design or implementation.

We have tried to increase our and BCS's understanding of all aspects of design competitions as quickly as possible. In conducting this study we have: (1) reviewed the available literature on building design competitions and building demonstration projects, (2) interviewed individuals involved in all aspects of the building field including architects, architectural organizations, builder trade groups, planners, financial organizations, and appliance manufacturers, and (3) contacted private

organizations and government agencies that have sponsored design competitions in the past. A comprehensive list of our contacts is contained in the appendix.

An important lesson learned from this background study is that in order to design a successful competition, BCS overall programmatic objectives must be well defined and tightly structured at the outset of the planning effort and, that the objectives of a design competition must be tightly linked to these overall objectives. We have inferred from conversations with BCS that there exist several major programmatic objectives. Our assumption is that the design competition is a potential policy tool the primary goal of which is to stimulate and promote energy conservation in building design, construction and use. As such, it must be evaluated on the basis of its effectiveness in achieving this goal within reasonable budget constraints. The principal BCS objectives which a design competition would be directed at achieving are identified below. They are not necessarily listed in their order of importance:

- to foster the development of new and innovative energy-efficient building designs, technologies and energy-using techniques;
- to motivate individuals and organizations related to the building industry (architects, engineers, builders, appliance manufacturers, financial institutions, regional code setters, administrators, etc.) to include energy conservation considerations in their building-related decisions;
- to increase the awareness of individuals about energy and economic savings opportunities in buildings and to motivate them to consider conservation in buying and using buildings;
- to accelerate the adoption of energy-conserving options across a broad market in the building field; and

- to promote the use of model energy building codes such as Building Energy Performance Standards (BEPS) which are now being developed.

As we point out below, design competitions can be effective in achieving some or all of the above objectives. The number of objectives achieved as well as the degree of success in achieving each objective is dependent upon a variety of factors which include:

- selection of objectives;
- level of resources committed; and
- appropriateness and effectiveness of the follow-up mechanisms selected.

Unless changed, the competition and follow-up program will be designed to accomplish these above listed objectives. At this stage, it is of primary importance to agree that our assumptions are correct and that these are the major program objectives.

The following conclusions, drawn from our background research, is based on the assumptions that the objectives listed above are essentially correct and exhaustive.

Major Conclusions

1. Design competitions are a feasible policy option to promote energy conservation in buildings. Although, such competitions will have to be coupled with other public policy tools in order to accomplish many of the objectives listed above. To a limited degree, design competitions have been successfully used in the past to promote similar goals.

2. Many types of design competitions and follow-up programs are possible, each having different implications as to cost, complexity, size, timeframe, audience, and expected accomplishments.

3. Before a program can be designed, BCS must carefully define what it intends to accomplish by selecting and prioritizing its objectives for this program.

4. The two important elements of the program are the design competition and the follow-up activities. The design competition by itself cannot accomplish the objectives related to widespread awareness of conservation. Indeed, if widespread awareness of conservation opportunities at the level of individuals is to be accomplished, then a heavy emphasis on the follow-up program will be necessary.

5. The follow-up program can consist of a broad range of tools including demonstrations, media campaigns and policy actions.

6. The design competition itself can be relatively inexpensive (costing between \$20,000 to \$100,000) depending on eligibility, solicitation, and selection criteria and awards. The follow-up program is directly tied to the scale of operation and can cost many millions of dollars.

7. Institutional factors (e.g., interest groups, local building codes) will have a major impact on the success of the program especially if it is very large and has complex objectives. It is essential, therefore, to consider and incorporate as many outside elements as feasible. One alternative is to use the mechanism of co-sponsorship.

Recommendations

1. The BCS should examine the objectives identified above and decide if the list is complete and which are important.

Prioritization of objectives will be essential in focusing our effort in the program development phase.

2. In order to begin to narrow the field of inquiry, DHR should analyze in detail a number of generic options for competitions and design options in order to determine the full range of implications for the DOE. This analysis will include a complete identification of the separate elements of each type of competition, the options that comprise the required follow-up program and the pros and cons of each element. It will thoroughly examine the expected program accomplishments and estimate program costs.

A later section of this paper shows an example of the type of analysis that must be done before selecting a specific design competition option.

Historic Overview--Lessons Learned

Building design competitions go back into the history of the United States. For example, the White House and Capital are both products of such competitions. Many competitions have been held since then and the more recent examples include: the 1976 Immigration and Naturalization Service design competition for border inspection stations; the 1976 Federal Energy Administration and the AIA Research Corporation competition for new design concepts for energy conservation in buildings; Exxon Corporation and the AIA Research Corporation contest in 1977 for application of solar technology in single-family homes.

Based on insight gained from these and other design competitions, as well as conversations with government officials, architects, engineers and educators, we believe that a number of general lessons have been learned about building design competitions.

Design competitions are usually successful in spawning new ideas, techniques, and concepts to deal with a stated problem or problems. While they are an effective mechanism for stimulating interest in specific projects or problems, they tend to reach a limited audience. Traditionally, design competitions have generated little public excitement and capture only a modest amount of the general public's interest, and for a limited period of time. Frequently, those who have an interest stand to benefit, either directly or from the competition. In general, design competitions have had a rather narrow focus both in terms of eligibility and the end users of competition results. They have tended to be structured to achieve limited objectives, rather than several complex objectives. Furthermore, they are not cost-effective exercises for the participants, except for the winner. As a result, many of the established architects and architectural firms stay away from them. Conversely, the "unknowns" in the profession view them as a vehicle to publicity and flock to them.

It appears that design competitions can be successful at achieving some things, but not others. Accomplishments must be viewed in the context of the competition objectives. For example, a student competition was held by the FEA and the AIA Research Corporation to promote new design concepts in energy conservation in buildings. According to an AIA Research Corporation official, the objective was "to get the problem on the table."

From that standpoint, the contest was a great success. However, in response to a question regarding public awareness or interest in the competition, he replied that it had been minimal at best. But that was not one of the objectives. Conversely, the AIA Research Corporation ran a design competition in conjunction with Exxon Corporation in which the results were published in full page ads in 46 newspapers across the United States. This generated substantial public interest according to them. An AIA Research Corporation official said that inquiries on the competition results come in on a daily basis.

Additionally, based on historical example, we feel that there are certain distinguishable features which characterize successful design competitions. They are:

1. The solicitor must provide adequate incentives to compete. For professionals this can be the understanding that the results will be well publicized. This type of recognition tends to carry more incentive value than the actual prize itself; the winner gains publicity and status among professional peers and potential clients alike.

2. The objective or objectives of the competition are clearly defined and generally understood. Generally speaking, well-defined objectives are the keystone of a design competition. Both the design criteria and the evaluation mechanism stem from them. In cases where objectives were not well defined, the resultant confusion tended to harm the credibility of the solicitor/sponsor and valuable time was lost in clarification of objectives.

3. The attainment of stated objectives were not predicated on the achievement of subobjectives, and that there was a direct link between the goals and the design competition as a mechanism to achieve them. We believe the issue here is one of control. It appears that when subobjectives are introduced into the design competition they are often accompanied by externalities, the control of which may be beyond the grasp of the solicitor. While these externalities can be positive or negative, the lack of control over them introduces an element of risk that should be avoided as it may have a direct bearing on the ultimate success of the competition.

4. The design criteria were laid out well in advance, and were clear and concise. This is important for several reasons. First, potential contestants will know what is expected of them. This tends to act as a de facto screening mechanism and, therefore, lightens the administrative work load. Second, it usually reduces the number of questions from contestants as well as minimize potential grumbling among the losers of the competition. Third, the judges/jurors have the major evaluation criteria established before entries are made.

5. Adequate evaluation mechanisms had been established prior to solicitation. This, too, is important for several reasons. First, it lets potential contestants know who will make judgment on their work and on what general basis. This can have significant bearing on the methods of presentation or the use of highly technical information. Second, the type of evaluation processes and the status of the individuals who judge has a significant bearing on the prestige and the coverage of the competition. Third,

the administrative burden can be reduced if procedures to handle entries are established before they start to arrive.

Operation Breakthrough--Overview, Lessons

In addition to design competitions, we have reviewed demonstration programs of innovative building designs. In particular, we have done an extensive review of Operation Breakthrough. Operation Breakthrough provides some valuable lessons about federally sponsored building design demonstration programs and the many factors related to motivating the building sector and consumers to accept innovative concepts in building design. Although some of the lessons duplicate those learned from design competitions, we feel that they merit discussion. Furthermore, we believe that a design competition must be linked with a follow-up demonstration program for widescale publicity and therefore an examination of the latter type of program is necessary.

In 1969, the Congress recognized the need to address the nation's domestic shortage of adequate housing for lower income families. Operation Breakthrough was initiated by the Department of Housing and Urban Development to improve the process of providing housing by demonstrating the value of industrialized (factory built) housing construction methods. A primary objective was to eliminate or reduce the social and economic barriers to industrialized housing construction. The Operation Breakthrough program cost the public \$72 million over a seven year period.

The success or failure of Operation Breakthrough is a moot point. Listed below are some of the more important lessons learned

from the demonstration program. These lessons are particularly germane when addressing problems that are characterized by complex, institutional interrelationships among federal agencies, state and local governments and the private sector.

1. Design criteria should be firmly established before demonstration proposals are requested from contestants. The officials at HUD did not do this and confusion and delay occurred because of untimely testing of housing design.

2. While important to the technology development process, evaluation of drawings or plans alone may be insufficient to judge the technical aspects of new approaches. Preliminary development, demonstration and monitoring may be necessary to thoroughly assess the technical and economic feasibility of proposed approaches. Despite HUD's extensive efforts in evaluating Operation Breakthrough housing systems proposals (22 proposals selected from a total of 236 submitted), at least five systems encountered cost and other production problems.

3. Experience gained through Operation Breakthrough also shows that preliminary analysis is needed to assess market uncertainties. Operation Breakthrough plans, for example, were based on assumptions that there would be high housing construction rates for ten years and that the government subsidized housing program would continue. These assumptions proved wrong. Government housing programs were suspended; the housing market declined; and Operation Breakthrough housing producers faced severe and unanticipated marketing difficulties.

Demonstration program plans should include policy strategies sufficient in scope and duration to overcome marketing problems that tend to retard using new technology. Although problems which prevented widespread use of industrialized housing construction methods were identified, HUD began marketing efforts without assessing the feasibility of its plans to remove or bypass market barriers.

4. Additionally, the success of Operation Breakthrough was predicated upon the achievements of subobjectives that were well beyond the control of the officials at HUD. For example, HUD believed that Operation Breakthrough builders would find local building code approval easier to obtain because their housing designs would have been thoroughly evaluated during the program. This evaluation, which included physical testing, was of some help to builders in obtaining code approvals, but local requirements still caused delays, increased production costs, and prevented marketing in some areas. The lesson here is that there should not be too many subobjectives in a demonstration program, and that the ultimate success of any program should not be predicated on the attainment of these subobjectives, over which the program director may have no control.

5. Demonstration program plans should include adequate evaluation plans, provide for the collection of basic data necessary to measure change, and assure the systematic evaluation of data during the program.

6. Finally, Operation Breakthrough has taught us not to attempt too much too quickly because the adoption and diffusion of an innovation is not an instantaneous process. It is difficult to convince individuals and organizations to expose themselves to

significant long-term risks of product failure without long-term federal commitment.

Identification of Program Structure Considerations

Our research has identified a number of major considerations that must be taken into account in designing the competition program. The primary issue is related to the overall structure of the competition. Two important elements of any action program are a clear statement of the objectives and a process for evaluating the achievements. These two points have been stressed previously in this paper in the historical overview section. Figure 1 illustrates the major program elements and the flow of program activities. Once the program objectives are clearly identified and prioritized, the major decisions that must be made concern the structure of the competition and the structure of the follow-up program. These are not independent activities because there is a direct linkage between the two structures.

Major Factors in the Design Competition

Our review of previous design competitions has shown that there are a number of generic elements that must be included in the planning process. Figure 2 illustrates the major factors in the structure of the design competition. These factors are:

- eligibility and competitors;
- design and evaluation criteria;
- awards or incentives;
- sponsorship; and
- administrative costs.

Figure 1

MAJOR PROGRAM ELEMENTS

Figure 2

ELEMENTS OF DESIGN COMPETITION STRUCTURE

<u>ELIGIBILITY & COMPETITORS</u>	<u>DESIGN AND EVALUATION CRITERIA</u>	<u>AWARDS OR INCENTIVES</u>	<u>SPONSORSHIP</u>	<u>ADMINISTRATIVE COSTS AND RESOURCES</u>
<ul style="list-style-type: none"> • architects/ engineers • architectural students/ universities • the general public • designers/ inventors • builders/ contractors 	<p><u>Building Segment</u></p> <ul style="list-style-type: none"> • single family • low rise • high rise • mobile home • commercial • community • subsystem <p><u>Technical Approach</u></p> <ul style="list-style-type: none"> • passive solar • active solar • conservation • wind • combination <p><u>Technology Status</u></p> <ul style="list-style-type: none"> • off shelf • newly developed • under develop- ment <p><u>Status of Building</u></p> <ul style="list-style-type: none"> • existing project • retrofit • new • future <p><u>Codes or Standards</u></p> <ul style="list-style-type: none"> • ASHRAE 90, 100 • BEPS • performance standards • regional codes <p><u>Potential Energy Savings</u></p> <p><u>Esthetic Value</u></p> <p><u>Cost Effectiveness</u></p> <ul style="list-style-type: none"> • first cost • life cycle cost 	<ul style="list-style-type: none"> • cash prize • seal of approval • recognition • demonstrate design 	<ul style="list-style-type: none"> • sponsor alone • with other agencies • with interest groups 	

Eligibility and Competitors

Five major categories of contestants have been identified as being potentially eligible to compete. These are (a) architects and engineers, (b) architectural students at universities, (c) builders and contractors, (d) designers, inventors and innovators, and (e) the general public. The decision as to who should compete depends on a number of factors such as the resources available to evaluate the designs (a large group could generate thousands of designs), the kinds of follow-up program planned, and the method of judging designs. In the past, most design competitions have been primarily targeted to architects, engineers, regional planners and architectural students. This is because they are generally sponsored by professional groups who are interested in receiving publicity for that particular group. One benefit to opening the eligibility to these two groups is that it would (a) decrease the number of possible applicants that will need to be evaluated and (b) anticipate professional interest group protests. The disadvantage, of course, is that fewer innovative ideas might surface. Since one of the major objectives is to encourage a wide base of support for conservation, both in the building trades and the public sector, if the program design required that the competition be related to a building that already exists (so that the results can actually be monitored) then many non-professional entrants would be eliminated.

There are two basic techniques for soliciting entrants for awards program. The first is an open competition where

an announcement is made of the awards program to all those who are eligible. The other technique is a nomination process. In this process eligible entrants are preselected by judges or some outside nominator such as a university. Both of these options have certain merits depending on the overall structure and objectives of the competition.

Awards and Incentives

Unlike several other types of competitive programs, the awards given in design competitions carry little inherent incentive value. More often than not, they are simply a certificate, plaque or letter of recognition. It appears that the competitors' incentive to compete stems from the stature of the design competition and the potential prestige and publicity of the award.

The incentive component should be viewed from the standpoint of the contestant. Students are generally eager to compete in design competitions. For them, the marginal value of their time is small and recognition at an early stage is of utmost importance. The ability to gain employment after graduation is greatly enhanced by winning a major design competition.

Professional architects, on the other hand, take a slightly different view. For them, the marginal use of their time is very high. They are concerned about the stature of the awards program and tend to look beyond the competition itself to the potential exposure to clients.

In order to assure that an adequate incentive is present, potential contestants must be aware that the competition will receive media coverage and that a meaningful follow-up program has been established.

Administrative Cost and Resources

The administrative cost for the design competitions that we have examined range from nominal to about \$100,000 (after planning has been accomplished) including administrative time and resources. Programs of comparable size could be undertaken within this range. The major expenses in the competition (excluding follow-up) are for program mailings, screening and judges. Prescreening by universities or professional groups could reduce these costs.

The major expense will come from the follow-up program. The size of the program and the costs attached to it can vary widely depending on what is to be accomplished.

Sponsorship

There are a number of benefits to co-sponsoring the design competition program:

1. Professional groups can act as a means of disseminating the information to members and screening solicitors.
2. Working with professional groups can help to lend their credibility and stature to the competition.
3. Co-sponsors can lend their expertise to the development and administration of the competition.
4. They can broaden the exposure through their trade magazines and membership networks.
5. They can participate in the planning efforts and mitigate possible future conflicts.
6. Sponsorship with a major magazine can provide an inexpensive means to widescale exposure.

Co-sponsorship will have to be undertaken only after serious consideration of the consequences. The consequences might include a very compromised program. In addition, conflicting or competing interest groups would be immediately put on guard.

Design and Evaluation Criteria

From previous design competitions we have learned that this issue is one of the most important to address at early stages in planning the competition. Generally speaking, well-defined design and evaluation criteria are the keystone of a successful design competition. In those cases where criteria were not well defined, the resultant confusion tended to harm the credibility of the sponsor and valuable time and resources were lost in clarification. The following elements have been identified as the most important design and evaluation criteria:

- potential energy savings;
- esthetic value;
- cost effectiveness;
- building sector: residential or commercial, single family detached, low-rise, high-rise, mobile home, row house, community, system or technology;
- technical approach: passive solar, active solar, strictly conservation, or a combination of the three;
- technology status: off-the-shelf technique or technology that is still being developed;
- level of development: existing building or project or retrofit, a new building or a building for the future;
- codes or standards: ASHRAE, BEPS, regional codes, performance standards; and
- sponsorship.

These elements, while they may not be inclusive, enumerate the most important considerations that have to be considered prior to putting together the entire design competition package.

Major Factors in the Follow-up Program

A strong follow-up program is essential to increase the awareness of the general public about the opportunities of conservation and in turn to motivate architects, engineers, builders, etc., to include energy efficient options in buildings. Follow-up programs can include a combination of media campaigns, marketing, and the use of a variety of parallel policy options to further motivate and various levels of demonstration to improve credibility. The major elements of the follow-up program are illustrated in Figure 3. At this time no attempt has been made to examine the elements in great depth. An important lesson is that most prior design competitions were very weak in the follow-up program and, therefore, generally failed to capture the imagination of the public or make measurable changes in behavior. Of course, the objectives of these competitions did not include large scale publicity or awareness campaign.

On the other hand, Operation Breakthrough had a very grand follow-up program with large scale demonstrations and media campaigns. The section of this report that discussed historical lessons examines this program in detail.

Figure 3

ELEMENTS OF COMPETITION FOLLOW-UP PROGRAM

<u>DESIGN DEMONSTRATION</u>	<u>MEDIA CAMPAIGN</u>	<u>PARALLEL POLICY ACTIONS</u>	<u>MARKETING</u>
<ul style="list-style-type: none">● paper designs● model● build for consumption● build for government	<ul style="list-style-type: none">● technical journals● general magazines● paid ads● co-sponsor with magazine● news coverage● etc.	<ul style="list-style-type: none">● tax rebates● enact building codes● national land use planning● etc.	<ul style="list-style-type: none">● seal of approval● subsidize builder● government purchase● loan guarantee● federal mortgage insurance

Illustrative Example

Developing a building design competition can range from the very simple to the highly complex. When the objectives are narrow in scope, eligibility is exclusive and the design/evaluation criteria are tightly defined, then the structure of the program can be relatively simple. However, if the program objectives are broad, wide-scale eligibility is important and the criteria for design and evaluation are difficult to pinpoint, then many factors will necessarily have to be considered in structuring the competition.

Our preliminary assessment is that the proposed BCS design competition will be very complex. For a program that is expected to accomplish much, broad objectives are often necessary. Rather than attempt to narrow the objectives which would be unnecessarily constraining, we have decided to turn the problem around. In the process of planning the competition, we will develop a series of generic programs and evaluate them as to how they meet the full range of objectives. Programs that are clearly superior will be presented for assessment by the BCS with the pros and cons of each approach. The BCS can then decide what is important within their own internal set of criteria and also determine what information or element is lacking. This information will be used in the refinement and restructuring of program options. In this way an iterative process will be undertaken that forms, reshapes and stresses key program elements until a satisfactory program is developed.

The following example illustrates the method that will be used in the next phase of the planning process. The elements

of the sample design competition, presented below, were selected to represent a feasible program having a number of components that can be generalized to other competition structures. We feel that the generic elements of this competition, while illustrative, can be used as the basis for a real program option.

Sample Design Competition Program

Summary:

Professional architects and engineers would submit the plans, pictures and descriptions of buildings they have designed and that have been privately built. The designs will be judged on a regional basis by distinguished professionals. Esthetic value, potential energy savings and life-cycle cost will be the major design and evaluation criteria. The awards will consist of plaques for the top regional winners and certificates of accomplishment for runners-up, with excellent designs. There would be extensive media coverage. The program will be co-sponsored by the AIA, NAHB, HUD and the Smithsonian Magazine.

The follow-up program will consist of monitoring the house for one year for energy and economic savings. An attempt to arrange special financial subsidies or incentives will be undertaken. The results of the first contest will be used to assess its value as an annual event.

COMPETITION ELEMENTS

Eligibility: Professional architects and engineers

Design and Evaluation Criteria

Building Segment : Single-Family and Low Rise
Technical Approach: Conservation and Passive Solar
Technology Status : Off-the-Shelf
Status of Building: Existing Structure
Codes or Standards: Performance
Cost Effectiveness: Life Cycle Cost

Awards and Incentives

- Plaque for top winners
- Regional certificate of accomplishment for runners-up
- Major Media Coverage

Cosponsorship

- HUD
- AIA
- NAHB
- Smithsonian Institute

Administrative Costs and Resources

- Two Man Years Administrative
- Three Judges - 3 man months

FOLLOW-UP PROGRAM ELEMENTS

Demonstration

Existing Model houses will be monitored for energy savings and cost savings for one-year period. Results will be publicized.

Media Campaign

- Technical Journals
- Smithsonian Magazine
- AIA Conferences
- Publicity about certificates of accomplishments

Policy Actions

Arrange preferential financing for award winning houses (tax rebates, loan insurance, etc.)

Pros

- Media coverage will be assured by cosponsorship with major magazine.
- The prize will be very valuable (certificate of accomplishment) for private marketability but cost to the DOE is little.
- A large participation by professionals is anticipated.
- A wide market (new single family and low rise dwellings) will be addressed.
- A wide base of consumers will become aware of the nature and cost savings opportunities of energy efficient dwellings.

Cons

- High risk of interest group pressure if prize interpreted strictly as government seal of approval.
- Extensive administrative cost in follow-up monitoring of buildings and media coverage.
- May be very difficult to arrange preferential financing.

Cons Con't.

- Difficult to assess whether this would stimulate consumers to prefer award winning designed houses or similar houses that claimed conservation as major design objective.
- The program costs would be in the medium range depending on the number of regions considered, the method of solicitation and judging, and the level of media coverage in follow-up.

APPENDICES

1. Individuals and Organizations Contacted
2. Description and Analyses of Prior Design Competitions
3. Publications, Articles, Testimony

APPENDIX 2: DESCRIPTION AND ANALYSIS OF PRIOR DESIGN COMPETITIONS

American Institute of Planners (AIP) - a professional organization for planners in the U.S.

Awards Program: To reward excellence and to gain publicity for planning and the Institute.

Award: An engraved plaque

Costs: No submission fee, costs are minimal as jury makes decisions by conference call; members of the awards committee do most of the work but one month of staff time is required.

Selection: A jury is appointed by the Board of Governors of AIP to make recommendations to the Board. Awards can be nominated by a chapter, a petition signed by 20 associate members, a member of the awards jury, or a member of the Board of Governors.

Follow-up: Presentations are made at an AIP national convention luncheon; awards are featured in Practicing Planning.

Lessons: The stature of the program would be enhanced if it received wider coverage. Recipients value award greatly and enthusiasm runs high.

American Institute of Architects (AIA) - the professional organization for architects in the United States.

Awards Program: To identify buildings of distinguished design with respect to functional utility, economy, environment, execution, aesthetics and energy efficiency.

Award: Certificates are issued to architect and owner.

Costs: \$75.00 entry fee - not refundable. The program is budgeted at \$20,000, but does not include the salary of one full-time director or secretarial time. Many of the Awards Program expenses are hidden in other areas of the AIA's overall budget.

Selection: A jury of five members is selected by the AIA's Board of Directors, four of whom are AIA members, the fifth is a graduate student.

Follow-up: Awards are given at the AIA national convention. The event gets national and international press coverage.

Lessons: While the program has great prestige associated with it, it reaches a limited audience. The general public exposure is small.

American Society of Landscape Architects (ASLA) - the professional society for landscape architects.

Awards Program: To honor the best and most visible design work in landscape architecture, and publicize the state of the art and illustrate what the term landscape architecture means.

Award: Award certificate to the landscape architect, consultant, project architect, engineer and planner.

Costs: \$50.00 entry fee. Best estimate of cost - \$25,000. This includes the distribution of a newsletter, a brochure outlining requirements for submission. Judges are not paid for time, but are reimbursed for travel expenses. One full-time staff person is used for the award program.

Selection: The jury is a panel of five people, distinguished in the design field. One is a landscape architect, and each of the others represents some related profession - architecture, planning, engineering, or the fine arts.

Follow-up: Newspaper coverage is good. Entrants are asked what newspaper they would like news releases sent to should they win. One entire addition of Landscape Architecture is devoted to selected designs.

Lessons: The program stimulates great interest among society members. Better media coverage could elevate level of public awareness of landscape architecture. However, the travelling exhibit of designs gives continual exposure to both the design firms and the ASLA.

Downtown Research and Development Center (DRDC) - an independent organization which studies and reports on downtown problems and solutions in an effort to provide a focus for recycling cities.

Awards Program: To honor towns, cities and developers who have done outstanding projects in central business district revitalization. The emphasis of the central city through sound physical development projects.

Award: A certificate and a stainless steel desk sculpture.

Costs: \$100.00 entry fee. No assessment of staff time available, stainless steel sculpture cost is \$200.00.

Selection: After initial screening by staff, 25 entries are submitted to a four member jury who are noted professionals of central business district projects.

Follow-up: Local press is received in winning communities. Results are published in Downtown Idea Exchange and in the Downtown Planning and Development Annual.

Lessons: DRDC has outlined limited objectives and feels that their competition satisfies those objectives. It appears that the more straight forward the objectives, the easier they are to achieve.

"Federal Design Improvement Program - Interview Sketch Exercise for Border Stations" - sponsored by the National Endowment for the Arts, in conjunction with the U.S. Immigration and Naturalization Service.

Awards Program: To reward outstanding approaches to installations from the point of view of aesthetics and function.

Award: Commission on building.

Costs: Roughly \$6,000, the bulk of which was travel-related.

Selection: Preliminary screening was done by architects representing NEA and INS. Final review was done by one architect from private firm as well as from NEA and INS.

Follow-up: Questionnaire was sent to all original contestants. Border installations were actually built.

Lessons: The client was represented in the judgment process (INS). This provided valuable insight into the actual needs of the client. Contestants were requested to submit proposal on how they would "approach" the design problem. Models and drawings were not encouraged. This tended to minimize administrative expenses and create a meaningful dialogue between the judges and contestants.

Industrial Development Research Council (IDRC) - a non-profit real estate executive and facility planners devoted to professional advancements.

Awards Program: For recognition of developers who have attempted to plan their facility to achieve harmony with the environment and still maintain economic development, and to make developers more aware of environmental concerns.

Award: Certificate.

Costs: Dollar figure for approximate total costs of program not available.

Selection: A jury is selected from among IDRC members to serve one year. The jury selects the person who is most responsible for an individual project, and he need not be the chief executive of a corporation.

Follow-up: Awards are presented at the annual convention, as well as published in the fall issue of Industries Development.

Lessons: The competition achieves its objectives and is of great value to the recipient in terms of public relations value. In a case such as this, it is important to recognize that the value of the competition is of minimal value to the sponsor, but of great value to the winners.

The International City Managers Association - a public interest group composed of municipal management professionals.

Awards Program: To recognize individual members who have distinguished themselves as professional managers through outstanding contributions in a number of management and innovative areas.

Award: Certificate.

Costs: No budgeted amount. Staff time amounts to two weeks of senior staff, and two to four weeks secretarial time. Out of pocket expenses include mailing binders with nominations to judges, cost of one day meeting of judges in Washington, D.C.

Selection: Entries are submitted to a panel of judges all of whom are ex-city managers.

Follow-up: Awards are presented at annual convention in the fall.

Lessons: There is little or no follow-up in this program. Hence, public awareness tends to be limited in vital area of public management. Media coverage would greatly increase the stature of the program, but limited objectives seem to be obtained under current program.

International Council of Shopping Centers (ICSC) - the trade association of shopping center developers, managers, and retailers.

Awards Program: To stimulate greater industry achievement in the future than has taken place in the past through the medium of education.

Award: A sculpture designed for ICSC.

Costs: No application fee; budget for the first year was \$10,000 which included printing and mailing of brochures to 1,300 members, awards and other expenses.

Selection: Submissions are received from developer members and are initially screened by regional committees. Their recommendations are then sent on to the Public Relation Committee for final consideration. All committee members are acknowledged experts in the industry.

Follow-up: None to speak of. Awards are presented at the annual convention. There is no press coverage.

Lessons: The ICSC is happy with their achievements to date. Their goals are limited, and they are pleased with their rate of achievement. Here again, limited objectives are not too difficult to accomplish.

The National Association of Home Builders (NAHB) - the trade association of residential builders, industrial suppliers, and related affiliates.

Awards Program: To recognize projects that "reflect basic principles of the sensible growth concept ... including concern for people, environment, good planning and design practices, and market acceptance."

Award: Plaque.

Costs: Entry fee - \$50.00. This generates roughly \$5,000 which covers cost.

Selection: Entries compiled by staff, seven-member selection committee of relatively well known architects, planners, and builders chosen among entrants.

Follow-up: Awards presented at annual meeting.

Lessons: The prestige associated with a design competition can be a function of the sponsors reputation. In this case, the NAHB is well known and the competition tends to attract a lot of attention among potential entrants.

"National Student Competition in Energy-Conscious Design," - sponsored by the Federal Energy Administration and run by the AIA Research Corporation.

Awards Program: To bring energy-conscious design into the mainstream of architectural practice and education and to bring recognition and support to efforts by architectural students and faculty to incorporate energy concerns in their work.

Award: No direct award.

Costs: Estimated cost, \$60,000-70,000. Costs are only estimates, as many of them are buried in AIA Research Corporation overhead as well as that of participating schools.

Selection: Entries were screened at each of the fifty-five schools that participated; only three final submissions were allowed from each school. Final entries were reviewed by the National Review Board, composed of ten members, all of which are involved either directly or indirectly in the field of architecture.

Follow-up: All of the 115 entries submitted from the various schools were published in a book called New Design Concepts for Energy-Conserving Buildings.

Lessons: It is important to recognize that this competition achieved its sole objective, and that little, if any, thought was given to sub-objectives. Furthermore, the marginal use of students' time is low and they will flock to these types of competition for their recognition value.

The National Trust for Historic Preservation - a national non-profit organization chartered by Congress to encourage public participation in the preservation of sites, buildings, and objects significant to American history and culture.

Awards Program: To recognize achievements of national significance in preservation.

Award: Cash, certificate, or original sculpture, depending on which award.

Costs: Direct costs budget approximately \$15,000. (Awards luncheon - \$8,000; trophies - \$3,675; certificates - \$1,550; Crownshield stipend - \$1,000.) Manpower - one director and secretary a few months a year.

Selection: Recommendations are made to an awards committee, composed of 6 or 7 members. This group then makes a recommendation to the whole Board of Trustees.

Follow-up: Presentations are made at an awards luncheon in May.

Lessons: The fact that there are so few awards tends to add prestige and distinction to the program.

Urban Design - an interdisciplinary magazine for urban designers and related fields.

Awards Program: For the best in urban design, preservation, conservation.

Award: Certificate to design firm and client.

Costs: Entry fee of \$10.00 covers material costs. No cost estimate of staff time.

Selection: A panel of distinguished designers, social scientists and other professionals are selected by the management editors.

Follow-up: Urban Design magazine and casebook, plus local press on project and design firm.

Lessons: A design competition can have a "bare bones" budget and achieve several distinct objectives. In this case, magazine subscribers are informed of the competition, interest is generated, awards given, and news is created for the magazine.

United States Department of Housing and Urban Development - a department of the Federal government, organized to improve housing and community development in the United States.

Design Program: To recognize superior design and planning quality in the management and execution of HUD-assisted local programs and projects.

Award: Certificates.

Costs: No entry fee; specific budget items not disclosed. Staff-time (director and assistant) full-time - 3 months, part-time - 1½ months.

Selection: Pre-screening is done by the Professional Advisor to the jury. The jury is selected by the secretary of HUD and is normally composed of five people, mostly architects.

Follow-up: HUD currently disseminates the results of the Biennial Design Awards in a widely publicized awards ceremony and in a publication by the Government Printing Office. Past awards programs have been featured in the HIA Journal, Journal of Housing, and Nation's Cities.

Lessons: We feel that the lesson here is that the results are published, but the general public awareness is minimal and short-lived at best. Greater media coverage, such as full-page ads in national newspapers, would help.