

A Technology Transfer Program in Computer-Aided Design for the Residential Building and Construction Industry

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BACKGROUND:

During the March 1994 meeting of the Advisory Council to the PHRC, authorization was given for the continuation of research projects and technology transfer programs in the area of Computer-Aided Design. The Advisory Council recommended that additional areas of funding be explored in order to supplement the seed monies provided by the PHRC members. The Advisory Council suggested that the general focus of the project should be directed toward the field practitioners, i.e. builders, remodelers, etc., in the form of training seminars and workshop.

In addition to the funds supplied by the Ben Franklin Partnership and the Advisory Council to the PHRC, additional funding sources for this project were secured from other sources. The Enhancement Fund for the Improvement of Student Learning has contributed \$2,000 to address the technical needs of undergraduate engineering students regarding the use of CAD applications during the residential subdivision design process. The Continuing and Distance Education Program at Penn State has contributed \$10,000 to address the needs of established residential builders in the use and application of CAD-based residential building design software. The Bernard and Henrietta Hankin Chair has contributed \$7,000 to the project.

In light of these funding acquisitions, the Operations Committee of the advisory committee of the PHRC met on August 31, 1995 to discuss the project. The committee voted to modify the deliverables of project to include a research report which would include a series of technical support documents, and the presentation of a series of CAD workshops.

OBJECTIVES:

An important component of any research effort is technology transfer. *A Technology Transfer Program in Computer-Aided Design for the Residential Building and Construction Industry* is a direct result of that aspect on university-based research. This project represents a joint-venture of the PHRC, NAHB, PBA, HBA's, and Penn State in response to the expressed needs of the residential building industry. This project is a direct response to the primary need to develop a technology transfer program which focuses on the practical applications of CAD. This project was designed to:

- Meet the previously identified needs of the professional audience.
- Transfer state-of-the-art CAD technologies to the industry.
- Promote quality distance and continuing education.

WHAT IT MEANS TO YOU:

The foremost benefit of this proposed project is that it addresses the identified needs of the target audiences through the development and deliver of a practical technology transfer program for computer-aided design. The level of CAD expertise provided by this project is consummate with that

required by the workshop or seminar participants. The skills and knowledge received by the workshop participants can be put to use immediately in the day-to-day operation of their business or firm. In addition, they gain a level of expertise and confidence required for future CAD system purchases and upgrades, effectively making them better educated consumers.

On the academic side, engineering students who are exposed to the information contained in the technology transfer programs become more skilled and knowledgeable design professionals, and construction managers. This benefits the students by making them a more marketable product, but in a larger sense, also benefits the entire residential building industry.

WHAT'S NEXT?

The research efforts of the PHRC concerning this project have established the PHRC as a primary source of information with regard to CAD applications within the residential building industry. In addition, the technology transfer component of this project has gained some national recognition. NAHB requested that the *Computer-Aided Design for the Residential Builder* workshop be included as one of the programs offered at the Interactive Computer Lab at the Builders' Show Houston, Texas on January 25, 1996. In addition, the Journal of Light Construction requested that the workshop be offered as a full-day technology transfer course at their Construction and Business Technology Conference in Marlborough, Massachusetts on February 15, 1996. The PHRC has honored both of these requests. Both of the workshop sessions were sold out in advance. Response to the format and presentation of the material covered in the workshops was overwhelmingly supportive.

A Technology Transfer Program in Computer-Aided Design for the Residential Building and Construction Industry is presented as a compilation of technology transfer programs with some additional background and explanatory text. The PHRC Technical Support Series Documents represent individual technology transfer programs. Although included as appendices with the report, each of these HRC Technical Support Series Documents is a stand-alone document which are used in conjunction with their respective technology transfer programs.