March 27, 1992

Ms. Miriam Maxian  
The Urban Institute  
2100 M Street, N.W.  
Washington, DC 20037

Dear Miriam:

The United States, through its Agency for International Development, is well-positioned to provide significant assistance in developing the private entrepreneurship and capacity necessary for the provision of the next generation of housing in the CSFR.

This report, the result of a 9-day visit to the Czech and Slovak Federal Republic, outlines a program of seven separate but interdependent actions to:

- Provide support to emerging Associations of Entrepreneurs and Contractors,
- Enhance management control by Contractors of their firms and projects,
- Demonstrate the adaptability of U.S. housing concepts and technologies to local conditions,
- Enhance the ability of private Developers to provide affordable housing.

I wish to take this opportunity to thank you for your help in arranging this visit and guiding my efforts. Kindly pass on my sincere appreciation to all those who gave of their time and knowledge to orient me to the unique challenges and opportunities for creating an industry in the CSFR which will be responsive to the new market for buildings and for housing in particular.

We at Beacon stand ready to assist U.S. AID, The Urban Institute and others in the implementation of their programs in the CSFR and look forward to early discussions in this regard.

Very truly yours,

Henry G. Irwig  
Vice President

Enclosure

cc. T. Kingsley

Recipient of the National Build America Award 1988 and 1989
CONTENTS

Private Development of Housing in the CSFR
March 27, 1992

1. Cover Letter

2. Table of Contents

3. Introduction

4. General Observations

5. Program Objectives & Participants

6. Program Activities
   1. Legislative Support for Contractor Associations
   2. Organizational Development of Contractor Associations
   3. Workshops on Financial Management for Contractors
   4. Specialized Materials Purchasing Workshops
   5. Construction Company Partnering Program
   6. Innovative Wall Construction Technology Demonstration
   7. Alternative Apartment Design Demonstration
   8. Financial Planning Workshop for Housing Developers

7. Implementing the Program

8. Appendices
   1. Visit Program
   2. Background Reports
   3. Contractor Mark-ups
   4. Housing Component Costs
   5. Contractor Association Guidelines
   6. Construction Firm Simulation

9. Beacon Construction Company
Introduction

9 Day Visit

This report is the product of a 9-day visit to the Czech and Slovak Federal Republic ("CSFR"), organized by The Urban Institute in early March of 1992. The purpose of the visit was to further develop and refine a program of activities to support the privatization of the housing industry in the Republic, specifically with respect to its production sector. The visit comprised a series of meetings with clients, contractors and engineers involved in the implementation of projects of various kinds, a number of site visits to projects under construction, discussions with senior representatives of research and training organizations and, most importantly, visits to and discussions with the initiators of the newly formed Associations of Entrepreneurs. Appendix 1 outlines the visit in more detail. During the visit, observations and preliminary conclusions were also discussed with Sarah Wines of the U.S. Agency for International Development and Tom Kingsley, Miriam Maxian and Petr Tajcman of The Urban Institute.

Context

The observations and conclusions presented in this report are based on the visit and on a significant set of observations and analyses described in a series of draft reports prepared by Miriam Maxian and others for The Urban Institute over the past nine months. These reports, which are referenced to in Appendix 2, contain substantial back-up details which are not necessarily repeated in this report. Although the author feels confident about the conclusions and directions outlined, the reader should be circumspect about using single items of information for purposes outside the scope of this report.

Report Organization

The report is organized as follows: First, some general observations are presented about the current state of the industry, its resources and the critical issues with which it is faced. A brief outline of key objectives to be achieved through the program and guidelines for its implementation follows. Then a series of separate but interrelated program activities are described with regard to both their objectives and the tasks involved in their implementation. The report concludes with an overview of the actions required to develop the industry which will provide the next generation of housing in the CSFR.
General Observations

Privatization

At the time of writing, the CSFR is in the midst of a process of privatization. Some small, private construction companies have formed and have begun to organize to promote their common interests; some state enterprise construction companies have been taken over by their key managers and are moving to undertake work in the slowly emerging private sector; other state construction enterprises have not yet been privatized and continue to have preferential access to publicly-funded work. The client sector of the industry—that is, those entities promoting and investing in housing—is in a similar, though less developed, process of change.

Current Pricing

Although the rigid price structure of the past is no longer enforced, its traditions are strong and evidence themselves in price guidelines which continue to substantially determine prices charged by contractors to clients. The prices contained in these guidelines incorporate investment, administrative and labor tax burdens which are no longer fully operative and which, currently, yield significant profit opportunities, especially to those firms which are organized as small businesses (less than 25 employees) using labor subcontracting. The relative inexperience of clients (that is investors and purchasers of buildings and building services) in market-economy practices and negotiation allows for situations where contractors' mark-ups for overhead recovery and profit exceed 40 percent of direct costs. Appendix 3 contains a short summary of the elements which comprise this mark-up.

Increasing Competition

Legislative action is currently underway which, if appropriately drafted, will both open up markets that in the past were segmented by both locality and work-type. Other legislation, already on the books, will not only eliminate the current practice of avoiding social security payments for tradespersons working for small, private companies but will also curtail the flexibility of contractors in undertaking labor-only subcontracting. Together with increasing wage levels and project experience—resulting from greater commercial interchange with Western European activities, both in the CSFR and abroad—this will give rise to increased contractor risks as costs and competitive pressures escalate.
General Observations

Technology

Precast concrete panel construction was the dominant technology for large-scale housing in the past 20 years. Smaller-scale housing is currently being produced using traditional masonry techniques. This includes hollow clay block, concrete block and face bricks for vertical elements. Horizontal elements are constructed using cast-in-place concrete and smaller-scale prefabricated planks. Interior finishes are almost universally cement plaster, as is exterior stucco. Recent commercial construction, particularly hotel construction, has seen the use of Western European techniques and materials, particularly for interior construction and mechanical and electrical systems. Lightweight framing and plasterboard systems—such as those which dominate U.S. interior construction—have been used in only very limited situations in their European derivative form. The combination of such systems with exterior insulation and stucco finishes is currently eliciting interest as a time-saving alternative to traditional construction. Appendix 4 illustrates the relatively high proportion of overall construction costs attributable to external walls when compared to that in the United States.

Materials

Local materials are readily available in various qualities and can currently be purchased at a discount on the listed price. Materials constitute the most significant cost element in construction. Even traditional materials requiring a high-labor content for installation exceed 50 percent of the cost of construction. Various efforts are currently underway to develop private organizations for the bulk purchasing or manufacturing of materials to reduce their cost and increase their variety. Foreign materials cost between twice and three times that of local materials, the difference being a function of currency exchange rates rather than customs or import duties. Integrating the purchase of those materials, especially those that are specifically tailored to individual projects, into the construction process constitutes a significant and new scheduling challenge for builders and contractors.
General Observations

Labor

Generally, labor seems well-trained. The training of tradespersons in a variety of basic trades allows for retraining of workers in new technologies. When appropriately recompensed and motivated, labor has been shown to be efficient and responsive in adapting to new technologies. The success of private Czechoslovakian contractors in undertaking small projects in Germany is a function of both this situation and the wage differentials at current currency exchange rates. A replacement for the labor training programs apparently provided by the state construction enterprises in the past is not yet evident.

Equipment

Mechanical equipment for the transportation of materials and tradespersons is plentiful and can currently be bought or leased from the larger public construction firms at economical rates. Even on small-scale projects using traditional materials, it is common to have a crane during erection of the structure and a hoist and several conveyor belts for the interior work and finishing operations. Much of this equipment is manufactured locally in the CSFR.

Industry Development

The affordability of housing is greatly influenced by the technical and cost efficiency of the construction industry. In Europe, generally, and also in the CSFR, the differentiation that exists in the United States between house builders and the general construction industry is not nearly as clear. The capacity of the construction industry to rehabilitate and upgrade the existing stock of housing and provide the next generation of homes is, therefore, very dependent on the appropriate structuring of the industry as a whole and the development of technologies which better address the needs of the users. Both of these cannot afford to wait for new programs aimed at housing specifically. Rather, they should be developed and refined on other types of projects which provide—because of the commercial benefits of quicker occupancy and more flexible design—additional resources to overcome the inevitable hurdles of innovation.

Henry G. Irwig – Beacon Construction Company

U.S. Agency for International Development
Program Objectives & Participants

Objectives

There are three objectives that emerge from this work, all of which are fully subscribed to by the relevant Czech and Slovak participants:

1. Improvement of opportunities for, and ability of, construction contractors to effectively compete for and efficiently manage construction over the longer term.

2. Introduction and development of new construction techniques and technologies which will enhance efficiency and improve building affordability and performance.

3. Improvement of capacity of developers to integrate physical and financial planning to ensure the feasibility of housing projects.

Key Organizations

As indicated above, work carried out to-date by The Urban Institute has been successful in identifying challenges and problems in the provision of housing, developing information relating to these challenges and problems, and establishing relationships with key organizations and individuals at the forefront of converting this sector from a planned to a market economy. Among these are the Guild of Private Entrepreneurs in the Construction Business in the Czech Republic and the Association of Slovak Entrepreneurs in the Slovak Republic. The visit culminating in this report was successful in confirming and refining previous findings, consolidating relationships with individuals and organizations, and establishing new relationships. Of particular importance in regard to implementing actions to provide assistance in addressing the challenges identified, are two institutions with internationally respected traditions of research and education related to housing and the construction industry. These are The Institute of Building Economics and Organization (in Bratislava) and The Institute for Education of Workers in Construction (in Prague).

Commitment

The current commitment of the entrepreneur organizations to the U.S. program is especially noteworthy as many are comprised solely of operating entities facing day-to-day commercial pressures. In addition, they have rapidly increasing access to European, particularly German, models of organization and technology which provide them with ideas and guidelines which can easily be adopted even though they may not provide the flexibility of their U.S. equivalents.
Program Activities

Overview

The following eight activities address the goals outlined above. Although each is described separately with its own objectives, background and implementation tasks, the activities are interdependent and reinforce each other. Consequently, the activities outlined below are oriented to providing immediate assistance and exposure rather than research and development.

- The first two activities are aimed at providing support for the development of the two Entrepreneur Associations catering for the new, private construction contractors.
- The third and fourth activities focus on enhancing the control by builders and contractors of the increasingly critical financial and material resources they manage in the implementation of projects.
- The fifth activity is designed to cater for the more established private contractors who desire greater exposure to U.S. organizations and methods.
- The following two activities provide the opportunity to widely demonstrate the benefits of U.S. technologies in reducing cost and enhancing design flexibility of housing.
- The final activity is directed at developers of housing and focuses on enhancing their ability to mold their projects to meet the constraints of financing available.

Time Frame

The rapid changes taking place in the CSFR as it moves from a planned economy to a market economy, the ready availability of other competing models of organization and technology and, most importantly, the current commitment of Czech and Slovak entrepreneurs to collaborate in and support the U.S. program described herein require that these activities commence with minimal delay. The implementation of the activities over the next 12 to 18 months will position the U.S. as a key contributor to the privatization of the housing industry in the CSFR.

Henry G. Irwig - Beacon Construction Company  U.S. Agency for International Development
ACTIVITY 1: LEGISLATIVE SUPPORT FOR CONTRACTOR ASSOCIATIONS

Objective

Ensure that new legislation currently being drafted and modification of existing legislation enhances access of private contractors to public work and does not hamper their ability to efficiently control the construction process.

Background

The existing construction code, which regulates the way in which housing and other projects are implemented, is designed for a planned economy and constrains private contractors from competing for public work. It is important that this code be redrafted promptly to address this issue. As the current code contains references to other matters—such as material norms and standards, and regulations regarding health and hygiene (all of which require substantial negotiation and refinement)—it is important that the process for the drafting of the documents, and the documents themselves, be disaggregated to ensure prompt change.

The new tax code will impose substantial business constraints on contractors using labor-only subcontractors. At this stage in the development of the industry and the formation of new subcontracting firms with few resources, what might normally be an acceptable strategy is extremely disadvantageous.

Tasks

- Debrief on current legislative efforts by Associations of Entrepreneurs and Contractors.
- Analyze existing and proposed legislation to determine:
  - subcontractor capabilities,
  - materials access,
  - subcontract agreements.
- Develop scenarios for continued development of privatized industry.
- Draft revisions to legislation which will enhance competitiveness of private contractors.
- Collaborate with Associations in implementing and monitoring effects of legislation.
ACTIVITY 2: ORGANIZATIONAL DEVELOPMENT OF CONTRACTOR ASSOCIATIONS

Objective

Ensure Implementation of Association programs in a way that properly recognizes critical contractor interests and their relationship to professional and labor interests which are in varying stages of development.

Background

In the absence of the web of representative associations which characterizes the construction industry in market-economy countries, the natural inclination for the new Associations of Entrepreneurs and Contractors is to create all-encompassing programs through which they can drive the industry to a market economy. Although the Articles of Association of at least one of the Associations is generally well-constructed, there remain critical questions of membership, control of work and control of labor which require further refinement. Appendix 5 provides some guidelines from typical, comparable U.S. associations.

In addition, the continued existence of the fledgling Associations depends heavily on their short-term ability to provide simple services, including information dissemination, to their members and potential members. Both the resources and techniques to accomplish this currently rely solely on the principals of the member companies who should provide executive direction rather than implementation.

Tasks

- Support establishment of key staff positions and basic facilities to provide:
  - limited membership services,
  - greater association visibility,
  - support for association development.

- Detailed review of existing and proposed activities and resource development of CSFR associations.

- Mapping of other industry institutions including those catering for engineers, architects and tradespersons.
Program Activities

ACTIVITY 2: ORGANIZATIONAL DEVELOPMENT OF CONTRACTOR ASSOCIATIONS

Tasks (continued)  
- Analysis of alternative U.S. associations and their activities, services and resource bases.
- Draft of 5-year plan for CSFR associations, including staffing and funding.
- Establish relationships with key U.S. associations to promote interchange.

Henry G. Irwig – Beacon Construction Company
U.S. Agency for International Development
ACTIVITY 3: WORKSHOPS ON FINANCIAL MANAGEMENT FOR CONTRACTORS

Objective
Enhance ability of private firms to manage their finances, especially cash flow, and progressively develop their overall management capabilities.

Background
The present existence of large mark-ups and the capability and willingness of clients to provide up-front funding for contractors has allowed the new private firms to succeed with minimal attention to the monitoring of profits and cash flow, both for individual projects and for the firm itself. In addition, certain fundamental accounting concepts have been distorted over time by the planned economy of the past. Increasing pressure on mark-ups in the foreseeable future, as competition increases and clients become less liberal with their funding, will threaten the viability of many newly-formed construction firms unless they maintain firm financial control.

Financial control implies not only the management of money but also the management of the functions, resources and work of the firm, all of which must be integrated to achieve business success.

Tasks
- Develop workshop materials integrating market economy financial concepts with CSFR accounting principles and practices.
- Organize and present 1-day introductory workshops in various centers.
- Provide follow-up consulting service to construction firms, as requested.
- Develop appropriate workshop materials to address the functioning of a firm in a market economy. Appendix 6 describes a highly successful system which could be modified for use in the CSFR.
- Organize and present 2-day follow-up workshops in various centers.
- Provide follow-up consulting services to construction firms, as requested.
ACTIVITY 4: SPECIALIZED MATERIALS PURCHASING WORKSHOPS

Objective

Enhance current construction project planning and control skills by improved management of the purchasing and delivery of materials, especially long-lead items.

Background

There is an increasing demand for a broader variety of construction materials and mechanical and electrical equipment for buildings. Some have to be premanufactured to suit the specific building project, others have to be imported from abroad, and still others are merely in short supply. The timely acquisition and delivery of these materials will become increasingly important to the successful implementation of projects and the reputation of individual construction contractors.

Tasks

- Analyze emerging materials supply situation in the CSFR.
- Identify critical items, the acquisition of which need to be carefully planned because of increasing demand, build-to-design or importation.
- Develop workshop materials focusing on the scheduling of materials purchasing for critical items in the CSFR.
- Organize and present a 1-day workshop in various centers.
- Provide follow-up consulting services to construction firms, as requested.
ACTIVITY 5: CONSTRUCTION COMPANY PARTNERING PROGRAM

Objective
Enhance appreciation by more sophisticated CSFR construction executives of U.S. methods and techniques and lay foundations for ongoing business relationships between U.S., Czech and Slovak entrepreneurs.

Background
A number of successful private firms have at their helm an experienced executive who has had experience in undertaking projects in a market economy abroad. The exposure of these individuals has generally been to Western European as opposed to U.S. practices and technologies. They are intensely interested in the more flexible management approaches and building systems that the U.S. has to offer and desire support both to establish initial relationships and obtain advice on an as-needed basis.

Tasks
- Create program for 1-month internship of recently graduated CSFR engineers in a number of U.S. construction companies.
- Implement program whereby interns develop in-depth understanding of a specific area of U.S. practice.
- Develop and implement 2-week study visit by CSFR construction executives to the U.S., incorporating comprehensive briefing by interns.
- Orchestrate follow-up interchange between U.S. and CSFR firms to encourage development of strategic alliances.
Program Activities

ACTIVITY 6: INNOVATIVE WALL CONSTRUCTION TECHNOLOGY DEMONSTRATION

Objective
Enhance the capacity of the construction industry to reduce the cost of wall systems and increase their performance with regard to energy efficiency and planning flexibility.

Background
Exterior walls compromise about 30 percent of the cost of housing construction in the CSFR. This is in the order of 10 percent higher than in the U.S. and is largely the result of the use of traditional technology, both in the form of precast concrete panels and in the form of traditional brick and block.

The use of drywall technology, including various forms of integrated insulation, holds much promise for both the renovation of existing buildings and the construction of new buildings. The United States remains at the forefront in the use of this technology, although Western Europe is rapidly catching up. It is only a matter of time before plasterboard and steel studs are introduced into the CSFR, with or without the guidance of U.S. experience.

Tasks
- Collaborate with the American Building Products Export/Import Council in making available videos and mock-ups of U.S. technologies.
- Identify upcoming projects which might take advantage of these technologies.
- Collaborate with all parties to facilitate appropriate adaptation and use of technologies.
ACTIVITY 7: ALTERNATIVE APARTMENT DESIGN DEMONSTRATION

Objective: Demonstrate the advantages of alternative apartment configurations and components resulting from the application of typical U.S. technologies.

Background: The configuration of apartments in the CSFR has been strongly influenced by the concrete panel systems used over the past two decades. The over-rationalization of this production system has led to layouts with less variety and efficiency than the emerging market demands. Similarly, the centrally planned materials supply industry resulted in the over-use of standardized materials which are now outdated.

The opening up of borders is progressively introducing Western European concepts, components and materials. These differ in significant ways from their U.S. equivalents, and their increasing familiarity tends to provide an automatic channel for their incorporation and adoption in the CSFR, in both renovation of existing housing and new buildings.

Access to U.S. concepts for the design of apartments and their components is difficult. The result is the relative unavailability of an alternative model at a crucial time in the development of the materials industry which will provide housing components in the CSFR in the future.

Tasks:
- Define and describe in detail apartment concepts and configurations.
- Select and specify U.S. alternatives.
- Identify typical apartment sizes and create designs using U.S. concepts and materials tailored to CSFR requirements at the upper end of the market.
- Construct model apartments in exhibition areas available to the general public and the construction industry.
ACTIVITY 8: FINANCIAL PLANNING WORKSHOP FOR HOUSING DEVELOPERS

Objective

Enhance the capability of private developers to plan their housing projects in a way that properly integrates financial feasibility into decisions on physical characteristics and project phasing.

Background

Past practices have led new private companies developing housing and other projects to proceed too far in the definition of the physical characteristics of these projects without properly considering the financial implications of these physical characteristics. These have to do with projected income, costs of construction (especially infrastructure expansion) and project phasing.

The result is that such developers risk wasted effort, missed opportunities and, most seriously, projects which do not meet the demands or resources of themselves or prospective purchasers. Experience in the U.S. over the past decades has resulted in the creation and refinement of financial analysis techniques and decision processes which allow the design of projects to be informed by the availability and value of money.

Tasks

- Develop workshop materials integrating development financing concepts and techniques with CSFR accounting principles and practices.

- Organize and present 2-day workshop.

- Provide follow-up consulting service to facilitate implementation of concepts and techniques in actual projects.
Implementing the Program

Eight Activities
This report has outlined a set of eight separate but interdependent actions which should be implemented during the upcoming 12 to 18 months to help develop the capacity of the industry in the CSFR to provide affordable housing.

Critical Resources
The successful implementation of the programs of support and development for the Entrepreneur Associations require the legal skills of U.S. consultants familiar with the housing and construction industries and the organizational experience of U.S. builder associations. Most critical, however, both for these activities and all the others, is the engagement of local support staff which can ensure continuity of the associations' efforts, coordination with U.S. support and expansion of the associations' memberships.

The workshops oriented to improving the control by builders and contractors of the financial and material resources they manage requires the involvement of U.S. consultants with construction firm accounting and scheduling experience, local research, education and training organizations and the coordinating effort of the associations' staffs, yet to be engaged.

The construction company partnering program requires the cooperation of U.S. and CSFR construction companies and very aggressive planning and coordination by both U.S. and CSFR program organizers.

The demonstration projects rely heavily on coordination with other U.S. agencies and material suppliers, contractors and design professionals. Local participation is required to ensure appropriate briefing, evaluation and implementation of the projects in the CSFR.

Finally, the development workshop should be implemented in conjunction with those organizations and individuals who are currently participating in improving the criteria for the evaluation of development proposals.
Implementing the Program

Windows of Opportunity

The interest and commitment on the part of Czechoslovakian organizations and individuals is present. The experience of the United States is relevant in providing alternative models and approaches to those progressively being introduced through contact with Western Europe, particularly Germany. What is needed now are the resources which can provide a continuous program of collaboration to ensure that the unique opportunities at this point of transition in the country can be made most use of.

Schedule

Ideally, the activities should be implemented together as indicated in the schedule illustrated below.

<table>
<thead>
<tr>
<th></th>
<th>92.2</th>
<th>92.3</th>
<th>92.4</th>
<th>93.1</th>
<th>93.2</th>
<th>93.3</th>
<th>93.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LEGISLATIVE SUPPORT FOR CONTRACTOR ASSOCIATIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>ORGANIZATIONAL DEVELOPMENT OF CONTRACTOR ASSOCIATIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>WORKSHOPS ON FINANCIAL MANAGEMENT FOR CONTRACTORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SPECIALIZED MATERIALS PURCHASING WORKSHOPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CONSTRUCTION COMPANY PARTNERING PROGRAM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>INNOVATIVE WALL CONSTRUCTION TECHNOLOGY DEMONSTRATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>ALTERNATIVE APARTMENT DESIGN DEMONSTRATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>FINANCIAL PLANNING WORKSHOP FOR HOUSING DEVELOPERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Henry G. Inwig – Beacon Construction Company

U.S. Agency for International Development
Appendix 1: Visit Program

MONDAY, MARCH 2 - PRAGUE

Discussions
- Activities of Czech Association of Contractors
- Privatization of state construction enterprise
- Constraints on private housing development

Site Visits
- 11-unit apartment building
  - modified traditional construction
- Multi-building apartment complex
  - large panel construction
  - dry masonry construction

Contacts
- Mr. Beswald INOR
- Mr. Jan Hruby Czech Association of Contractors
- Mr. Jan Zemanek H.N. Gorin International, Inc.
- Mr. Stradal Ceskomoravska Stavební ("CMS")
- Mr. Ludek Sulc Ceskomoravska Stavební ("CMS")

TUESDAY, MARCH 3 - TABOR

Discussions
- Activities of Czech Association of Contractors
- Managing a private construction company
- Managing construction projects

Site Visits
- Smaller renovation projects
  - major reconstruction of single-family house
  - modernization of supermarket
- Food processing facility
  - refrigeration building

Contacts
- Mr. Martin Krivanek Czech Association of Contractors
- Mr. Kamenicky Sizl K-Efekt
- Mr. Vcelait Zdenek Kavas, Tabor
Appendix 1: Visit Program

WEDNESDAY, MARCH 4 - BRATISLAVA

Discussions
- Process for private housing development
- Development regulations and approvals
- Large panel housing deficiencies
- Activities of Slovak Association of Entrepreneurs
- Managing a construction firm
- Managing construction projects
- Lightweight walling technologies

Contacts
- Ms. Jaroslava Zapletalova, Ustav Pre Byvanie, s.p.
- Mr. Gubric, Ustav Pre Byvanie, s.p.
- Mr. Jozef Ruzansky, Consult
- Ms. Jaroslava Zapetalova, Ustav Pre Byvanie, s.p.
- Mr. Mlloslav Sumec, Consult
- Mr. Roderick Marshall, Sanders & Dempsey
- Mr. Vladimir Randa, Randa & Spol
- Mr. Jozef Ruzansky, Consult
- Mr. Mlloslav Sumec, Consult
- Mr. Roderick Marshall, Sanders & Dempsey

THURSDAY, MARCH 5 - BRATISLAVA

Discussions
- Contracting and pricing
- Manpower planning and site organization
- Current research in housing and building
- Retrofitting large panel housing
- Energy conservation

Site Visits
- Multi-building apartment complex
  - Large panel construction

Contacts
- Mr. Ivan Krizka, Stavebne Bytové Druzstvo
- Mr. Mrazik, Mrazik Construction
- Mr. Simoncic, AB Prompt
- Mr. Pavel Virsik, Institute of Economics and Organization of Building Industry
- Mr. Ivan Krizka, Stavebne Bytové Druzstvo
- Mr. Mrazik, Mrazik Construction
- Mr. Simoncic, AB Prompt
- Mr. Pavel Virsik, Institute of Economics and Organization of Building Industry
Appendix 1: Visit Program

FRIDAY, MARCH 6 - PRAGUE

Discussions
- Contracting and pricing
- Constraints on private housing development
- Lightweight walling technologies
- Continuing education programs and facilities

Site Visits
- Major renovation of large hotel
  - use of western technologies

Contacts
- Mr. Oldrich Gara, Inkoma Limited
- Mr. Jan Zemanek, H.N. Gorin International, Inc.
- Mr. Beswald, INOR
- Mr. Vladislav Blecha, Institute for Education of Workers in Construction
- (Assistant), Institute for Education of Workers in Construction
- Mr. Miroslav Kuolacek, Stavebnl Zasabovani Praha

MONDAY, MARCH 9 - PRAGUE

Discussions
- Managing a private construction company
- Lightweight walling technologies
- Contracting and pricing
- Energy conservation
- Finance and accounting principles

Contacts
- Mr. Karel Mrazek, Building Technical Institute
- Mr. Petr Lukes, Agrostav Construction
- Ms. Magdalena Souckova, Arthur Andersen & Company

TUESDAY, MARCH 10 - PRAGUE

Discussions
- Recap of previously mentioned subjects

Site Visits
- Various projects under construction

Contacts
- Mr. Oldrich Gara, Inkoma Limited
- Mr. Jan Zemanek, H.N. Gorin International, Inc.
- Mr. William Lobkowicz, C.E. Group Inc.
- Mr. Otakar Dvorak, Steffian Bradley Associates, Inc.
Appendix 2: Background Reports

Demonstration Projects for Private Housing Development
prepared by Miriam Maxian, February 1992

Assistance to Private Firms in the Construction Sector
prepared by Miriam Maxian, February 1992

Survey of Housing Sector Firms in the Czech and Slovak
Federal Republic
prepared by Miriam Maxian, January 1992

Memorandum titled Regional Centers
written by John Lyons, January 1992

Memorandum titled Kbely Development
written by Jan Zemanek, December 1991

Urban Institute Czechoslovakia Work Program
September - December 1991
prepared by Miriam Maxian, September 1991

Draft version of Preliminary Assessment of Private
Enterprise in Czechoslovakia's Housing Sector and
Opportunities for Technical Assistance and Training
prepared by Miriam Maxian, July 1991

Draft version of Program of Technical Assistance and
Training Support for Housing Reform in Czechoslovakia
1991 Objectives and Short Term Work Program
prepared by Miriam Maxian, undated

Housing Development Costs Czech and Slovak Federal Republic
prepared by Miriam Maxian, undated

Work Program for Component 1: Stimulating Private
Entrepreneurship in Housing
prepared by Miriam Maxian, undated

Profiles of over 100 companies
prepared by Miriam Maxian, undated
Appendix 3: Contractor Mark-ups

Currently small, private contractor's mark-ups for overhead recovery and profit appear to incorporate the following elements, in addition to the typical contractor's overall project mark-up:

1. Discounts on listed material prices from state material suppliers.

2. Fees for the transportation of materials on-and off-site, based on the weight of materials incorporated into the building.

3. Avoidance of overtime premiums that need to be paid by non-private companies.

4. Avoidance of social security taxes on smaller labor-only subcontracts.

5. Various other formalized contingencies.
The table below illustrates the relatively high proportion of overall construction costs attributable to external walls in the CSFR, where compared to that in the U.S. Although this comparison is based on data developed for other purposes and incorporates buildings which are not fully comparable, it is felt that this does not invalidate the general conclusion supported by the data presented below. For example, compensating for the more elaborate H.V.A.C., mechanical and electrical systems used in the United States, still allows the external wall system in the CSFR to comprise at least 30 percent more of the total cost than does the U.S. equivalent.

<table>
<thead>
<tr>
<th>BUILDING COMPONENT</th>
<th>CSFR</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Floor Construction</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Roof Construction</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Exterior Wall Construction</td>
<td>31</td>
<td>18</td>
</tr>
<tr>
<td>Interior Construction</td>
<td>24</td>
<td>22</td>
</tr>
<tr>
<td>HVAC, Plumbing, Electrical</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>Sitework</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100 %</td>
<td>100 %</td>
</tr>
</tbody>
</table>
Appendix 5: Contractor Association Guidelines

Networks of Associations

In market economies, the construction industry is subject to significant fluctuations in demand. This results not only from the government's desire or capability to provide facilities or employment but also from the cost of money and the general level of business activity. Such fluctuations have led to an industry that is fragmented with various participants in the building process developing groupings and associations to preserve their interests which, at various times, may be inconsistent with the needs of other participants. Consequently, in the United States and other western countries, there has developed a network of associations, each with its own purpose and membership. At times their interests may be fully consistent with one another, while at other times they may be in conflict, requiring negotiation and reconciliation to address emerging needs and issues.

Three Sets

At the level of the industry as a whole, there are three sets of associations—addressing the interests of building developers, owners and operators; planners and designers; and those involved with the production of buildings, respectively.

- The first group is primarily interested in maximizing opportunities for real estate development and the maintenance of long-term value of property.

- The second group is concerned with technical innovation and the assurance of design quality at various scales.

- The interests of the third group revolve around the availability and efficient use of resources, including labor.

Within each of these there are subgroups concerned with specific sections of the market or with specialized aspects or techniques.
Appendix 5: Contractor Association Guidelines

Production Sector

Within the production sector of the industry, there are generally three component interests:

- Contractors, builders and subcontractors who marshal resources and accept the risk in constructing buildings for investors at a certain quality level and within specified cost and time limits.

- Material and equipment manufacturers and suppliers who take the risk of investing in manufacturing facilities and inventories of materials and equipment to supply contractors and subcontractors.

- Individual skilled tradespeople who band together to ensure the supply of trained personnel to contractors through recruitment, training and referral.

In the United States, each is represented by a set of associations operating at national, state and local levels.

Builder Associations

In the United States, there are a variety of such organizations, each of which is organized somewhat differently, depending on the segment of the market for buildings which they are serving. There is a relatively strong differentiation between builders of single-family houses and general contractors for other buildings, which may not be directly applicable in the CSFR.

Membership

Full membership of these associations is generally restricted to firms engaged directly in the construction of buildings, while other types of organizations are usually obliged to accept less-than-full membership, without voting rights. Firms pay membership dues to the associations either at a flat rate or on the basis of their annual volume of work. Membership is established at the local level and generally fluctuates over time according to overall economic conditions. For a population of 6,000,000 persons, associations may have between 150 and 500 members, depending on the sector which the association serves.
Appendix 5: Contractor Association Guidelines

Offices and Staffing

Generally, associations have local offices which correspond with major urban concentrations. In these offices, they have anywhere between three and eight staff and support one or two legal or political consultants, depending on the extent to which they also provide state-level functions. Associations also maintain a presence at the national level where they maintain relatively large staffs to provide research, training and lobbying.

Key Functions

Typically, associations undertake the following functions at the local level:

- Membership services, including new member recruitment, news updates and social events.
- Education and Industry advancement including supervisory training and business management development.
- Government affairs, including lobbying on legislation and development of codes.
- Development of Industry relationships, including contract agreements and labor relations.

Fees

As indicated above, there is considerable variety in the fees which associations charge their members. A very crude guideline for total membership fees is in the order of .02 percent of the gross revenue of the membership. The distribution of these fees also varies. However, at least one association splits them 1/3 to the local, 1/3 to the state, and 1/3 to the national.
Enriching Executive Skills for the Construction Industry

AROUSAL helps managers in the construction industry improve both individual and organizational performance. The core of AROUSAL is a sophisticated personal computer-based business simulation system that enables individuals or groups to evaluate the potential costs and benefits of various business and organizational strategies. AROUSAL presents a life-like management environment; in fact, its name stands for "A Real Organizational Unit Simulated As Life."

APPLICATIONS
AROUSAL is a powerful management training tool that can handle issues arising from the ever increasing complexities of business and organizational life in the construction industry. AROUSAL has been used extensively:
- as a key learning tool in management courses
- for coaching individual managers
- in management and corporate performance evaluation
- in team building and leadership development
- in helping managers cope with change
- to develop more responsive information systems
- for staff orientation

AROUSAL was developed for:
- training personnel in construction companies to enhance the strategic skills of their managers
- management training consultants in training both construction executives and industry training personnel
- firms and consultants providing services to the construction industry to familiarize their personnel with the management challenges facing construction firms
- industry associations and government agencies offering business and management training to start-up companies
- universities and schools providing construction-related programs of study
- construction executives in evaluating potential costs and benefits of various business and organizational strategies

DESCRIPTION
AROUSAL simulates the world of senior managers of a case-study firm. It generates information that would normally be available to these managers and enables them, either individually or in groups, to deal with these data and their embedded issues as they would in real life. AROUSAL assists managers in developing, implementing,
Appendix 6: Construction Firm Simulation

Private Development of Housing in the CSFR

evaluating and relating their decisions to past experience in a risk-free environment. The workshop can be tailored to take from one to three days. The AROUSAL package consists of:

- An audio-visual presentation and written description of the background and current status of a case-study firm. In the U.S., the "off-the-shelf" case-study is a $5 million year construction firm located in Boston, MA.
- A computer-based simulation system that contains information about the case-study firm and its market environment, records management decisions and reports information produced as a result of those decisions. It requires an IBM PC or compatible with 256 kBytes of memory and a printer. The software is completely menu-driven and participants can become wholly proficient in its use in only an hour or two.
- A complete set of workshop materials and a guide for instructors on how to use the system for training and development.

MAKING DECISIONS

An AROUSAL workshop begins with a brief orientation to the case-study firm via audio-visual and written materials. Participants are instructed on how to operate the simulation system as they use it to gather the necessary information about the firm. They make their decisions and key them into the computer. Participants typically go through six to eight quarterly decision cycles with the simulation system. For each quarterly decision cycle, AROUSAL permits participants to make the following decisions:

- determine a marketing plan
- respond to bid invitations
- front-end load bids
- set the extent of subcontracting on projects
- step up and prioritize project production schedules
- allocate staff to projects
- determine company organizational structure
- change reporting relationships
- create and alter job descriptions
- promote and reassign staff
- select candidates for vacant posts
- recruit and fire staff
- adjust salaries

REPORTS

When participants are satisfied with their decisions, the computer simulates the company's quarterly performance and reports information that shows the effects of the decisions on the company and its staff. Participants gain an understanding of the effect of their decisions, and of new issues they expect to emerge in forthcoming quarters, by reviewing these quarterly reports. AROUSAL produces reports on:

- company finances
- cash flow
- staff performance and commitment

EXCHANGING PERSPECTIVES

Throughout the workshop participants learn from each other, requiring only minimal guidance from the instructor. As each group formulates its decisions for each simulation cycle, participants become familiar with their individual and co-participants' management techniques. They gain insights on the strengths and weaknesses of their ways of coming to decisions and of their interactions with co-managers. Participants follow the effects of their individual and group management philosophies and procedures by reviewing the effects of their decisions at the end of each simulation cycle. If more than one group is undertaking the workshop at the same time, these different groups meet periodically and at the end of the workshop to compare their decisions and results, thus acquiring further insights into the benefits and costs of alternative management styles.

CUSTOMIZATION

Although the "off-the-shelf" version of AROUSAL has benefited many firms, AROUSAL has been tailored to reflect the specific circumstances of a number of companies. In these cases, the case-study firm used in the simulation system has been modified to meet the particular organizational requirements and operation of that specific company.
Beacon Construction Company

Experience
Beacon Construction Company is a major Boston-based construction manager with highly developed expertise in the programming, management and construction of a wide-range of projects. These projects include over 10,000 units of housing, 4,000 hotel rooms in various parts of the U.S., and landmark buildings such as the award-winning Rowes Wharf complex on Boston's waterfront and the newly restored South Station. Beacon includes among its clients Harvard University, Royal Dutch Shell Pension Fund, Massachusetts Institute of Technology and Hebrew Rehabilitation Center for Aged.

Owner's Builder
Combining over 45 years of construction experience, successful Industry relationships and state-of-the-art building systems analysis, Beacon is recognized for establishing and meeting aggressive cost and schedule goals while satisfying the highest quality standards in the Industry. It manages and builds from the owner's point of view and strives to reconcile what are often competing objectives—namely, design integrity, construction efficiency and operational continuity—through a creative problem solving approach.

Development Consulting
Beacon Construction Company has a long tradition of assisting owners, lenders and others in the planning and management of programs and projects—to identify and examine the alternatives available before development and design decisions are made. Increasingly, we are called upon to provide owners, architects and an ever-increasing variety of institutions with comprehensive analyses and recommendations which can help steer developments toward cost effective implementation. A recently completed project of this type is the development and evaluation of alternative scenarios for the refurbishment of 11 freshman dormitories at Harvard Yard.

New Directions
Beacon Construction Company has recently expanded its focus to assist institutions and commercial enterprises and their contractors in planning and managing development and construction programs in Europe. It has undertaken a number of consulting projects for both U.S. and European clients and has developed close working relationships with highly respected counterparts in both Italy and Holland.
Beacon Construction Company

Staff

Its staff consists of committed, highly qualified building professionals with expertise and experience in a broad range of disciplines, including program and construction management, mechanical and electrical systems, energy conservation, asbestos management, facade construction and rehabilitation, and many innovative techniques of which "up-down" basement construction is one example. A few representative biographical profiles are provided below.

James Becker

With over 25 years of professional and educational construction experience, Jim Becker has created and directed a construction management organization that has produced office buildings, mixed-use projects, hotels, luxury condominiums and retail fitouts in 12 states. Jim is recognized nationally as an expert in solving technical building problems, including foundations, structure, and exterior wall construction. He is also a Senior Lecturer for the Department of Civil Engineering and the Center for Real Estate Development at M.I.T., and serves as chairman of the Artery Business Construction Management Committee and Friends of Post Office Square Construction Committee.

B.S., Civil Engineering, Cornell University
M.S., Civil Engineering, Cornell University
Ph.D. Structural Engineering, University of California, Berkeley

Joseph Brown

A construction professional with over 20 years of experience, Joe Brown oversees construction management projects and is particularly familiar with complex subsurface and structural assignments. He orchestrates all team players, from engineers and architects, to project managers and subcontractors. Joe has worn the hat of owner, engineer/designer and construction manager. Joe began his career as a Peace Corps volunteer in the Dominican Republic teaching fluid mechanics and mathematics and working as a Regional Engineer. He subsequently provided engineering expertise for an International Emergency Relief effort in a mountainous region of Peru after a devastating earthquake.

B.S., Civil Engineering, Cornell University
M.S., Civil Engineering, Cornell University
Licensed Professional Engineer, New York

Henry G. Irwig – Beacon Construction Company

U.S. Agency for International Development
James Crosta

Jim Crosta has over 26 years of construction experience in office and mixed-use buildings, renovations, healthcare and educational facilities, housing and hotels. As Director of Estimating and Purchasing, Jim is responsible for tracking the market pulse of the construction industry, and he has assembled one of the industry's most comprehensive cost data banks for the Boston area. Jim is an expert in conceptual estimating, value engineering and the development of purchasing strategies. When Beacon acts as general contractor, he oversees the negotiation of all major subcontracts and material supplies.

A.S., Architecture/Engineering, Wentworth Institute of Technology
Licensed Construction Supervisor, State of Massachusetts
Licensed Real Estate Broker, State of Massachusetts

Henry Irwig

With over 20 years of diversified experience in the construction industry, both in the United States and overseas, Henry Irwig is recognized nationally and internationally for his expertise in the organization and management of construction firms and the building process. Henry is also responsible for Beacon's European initiative. In addition, he directs program management projects and has initiated and implemented several innovative programs and policies regarding asbestos management, energy conservation and construction mitigation, a number of which have been incorporated into governmental policy-making. Henry has had teaching, research and consulting experience in the United States and overseas and continues his association with the Massachusetts Institute of Technology as Senior Lecturer in its Center for Construction Research and Education.

Master of Architecture, University of Witwatersrand
Ph.D., University of Witwatersrand
Registered Architect, State of Ohio

David Lash

A veteran development manager, Dave Lash, assists clients and architects in project planning, regulatory processing and preconstruction services. Over the course of a 16-year career, Dave has served in a string of client positions in real estate development, facility development and city planning.

B.S., Engineering, Tufts University
M.S., Civil Engineering, Massachusetts Institute of Technology
Board Member - Society for Marketing Professionals
Member - Society of College and University Planners
Associate Member - Boston Society of Architects

Henry G. Irwig – Beacon Construction Company

U.S. Agency for International Development
Beacon Construction Company

Gary Lovesky

Gary serves as Project Manager and holds primary responsibility for all aspects of the project, from initial budget to project closeout. While at Beacon, Gary has also worked on projects as scheduler, project engineer and expediter. He is responsible for the creation and maintenance of the construction schedule for each project he is affiliated with. Previous to Beacon, Gary was a set designer and technical director for professional theatre.

B.A., English Literature, Harvard University
M.S., Civil Engineering, Massachusetts Institute of Technology
Massachusetts State Builder's License
Member, American Society of Civil Engineers
Member, National Trust of Historic Preservation

George Mastaby

George Mastaby has been with Beacon for six years. As Treasurer, he is responsible for all financial, administrative and data processing matters of the Company. Prior to that he was Assistant Treasurer for the public utility, Boston Water & Sewer Commission.

B.S., Accounting, Northeastern University
M.B.A., Finance, Northeastern University
Treasurer, Massachusetts Chapter of Construction Financial Management Association ("CFMA")
Member, Tax & Fiscal Affairs Committee

Seth Ravitz

Seth Ravitz joined Beacon as Project Manager in 1988 and is currently working on a historic dormitory renovation for Harvard University. He specializes in historic restoration and renovation projects and has worked on two landmark restoration projects in Boston and New York City. Seth's hobby is studying the history of building technology and he is a at the Association for Preservation Technology and the National Trust for Historic Preservation. Seth is also currently completing a Master's Degree program in City Planning and Historic Preservation at Cornell University.

B.S., Economics, The Wharton School, University of Pennsylvania
MRP Candidate, City and Regional Planning, Cornell University
Association for Preservation Technology

Henry G. Irwig – Beacon Construction Company

U.S. Agency for International Development
Beacon Construction Company

Edward Segel

Ed Segel provides over 36 years of construction experience, having held nearly every position in the industry, in commercial, residential, institutional and hotel projects. He serves as Project Executive for Beacon's major construction projects, overseeing all office and field activities to ensure the budget, schedule and quality are maintained. In addition, Ed has overall responsibility to assure the development, implementation and ongoing effectiveness of Beacon's Safety Program.

B.A., Building Construction Wentworth Institute
Certificate: Construction Executive Program, Stanford University
Licensed Builder - City of Boston, Class ABC

Harvey Steinberg

Harvey Steinberg possesses over 37 years of diverse professional construction experience in office and mixed-use buildings, housing and hotels and renovation and interiors construction. Harvey is particularly experienced in the renovation of historic structures and served as the Project Executive on the renovation of the landmark Hotel Meridien in Boston.

B.S., Civil Engineering, Massachusetts Institute of Technology
Member, Association of General Contractors of Massachusetts
Member, National Association of Home Builders

George Swetz

George Swetz has served in the construction industry, managing retail, commercial and hotel projects, with a special expertise in planning and design management. As a Project Manager, George is responsible for project buyout control, scheduling, cost control and change estimating.

B.A., Architecture, University of Cincinnati
M.A., Architecture, University of Cincinnati
M.B.A. Program, Boston University