Development and Urban Metamorphosis
Volume I  Yemen at the Crossroads
The Aga Khan Award for Architecture

Development and Urban Metamorphosis
Volume I Yemen at the Crossroads

Proceedings of Seminar Eight
in the Series
Architectural Transformations in the Islamic World
Held in Sana’a, Yemen Arab Republic

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Contents

Seminar Participants

Preface
Said Zulficar

Opening Remarks
Qadi Ismail al-Akwa
Jacques Sirvain
Maurin Bouchenaki
His Excellency Prime Minister Yahya al-Iryani
His Highness the Aga Khan

Introduction
Ahmet Evin

1 Strategies for Change

The Impact of Development on Society and the Built Environment
Said Muhammad al-Attar

Conservation and Development
Michael Welbank

Environmental Design in the Arab World
Mohammad Makiya

Comments

Infrastructure, Technology, and the Pattern of Urban Settlement
Ismail Serageldin

Rural Energy Issues in a Developing Society:
The Case of Yemen
Manfred W. Wenner

The Sana'a Urban Development Project
Robert K. Adams

A Construction Industry in Transition
B.V. Kulkarni

Comments
2 Yemen: A Closer Look

Hodeidah: The Transformation of a Yemeni City
Bernard Verdier

The Old City of Sana’a
Ronald Lewcock

Mokha: The City of the Past and the Future
Dirar Abdul-Daim

Voices and Images of Tradition and Modernity
Kamil Khan Muntaz

Comments

Workshops
Seminar Participants

Concluding Remarks

What We Have Learned
William L. Porter

His Highness the Aga Khan

Editor ......................... Ahmet Evin
Technical Editor ............ Darl Rastorfer
Production Manager ...... Patricia Theseira

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Seminar Participants

His Highness the Aga Khan

Mr. Abdullah Hamid Abdalla

Architect/
Regional Planner
SUDAN

United Nations Economic Commission for Western Asia
Saadaun Street
Post Box 27
Khairat Baghdad
Iraq

Human Settlements Officer at the United Nations Economic Commission for Western Asia (ECWA).
Former Economic Affairs Officer at the United Nations Economic Commission for Africa (ECA).

Mr. Jamal Muhammad Abdah

Engineer
YEMEN ARAB REPUBLIC

Ministry of Public Works
Sana’a

Head of Earthquake and Reconstruction Committee, Ministry of Public Works.

Mr. Dirar Abdul-Daim

Planner
YEMEN ARAB REPUBLIC

Sana’a

Director of Planning, Confederation of Local Development Association.

Dr. Samir Abdulac

Architect/
Urban Planner
FRANCE/SYRIA

119, rue Lecourbe
Paris 75015
France

Consultant to UNESCO, OECD, and several French organisations for urban planning and architecture. Author and lecturer. Member 1980, 1983 Award Technical Review Team.

Mr. Robert Adams

Architect/Planner
USA

15, square Max Hymans
Paris 75741 Cédex 15
France

Consultant to BCEOM. Resident urban planner for the master plan study at Port Sudan, Suakin, Tokar and adjacent areas in Sudan. Resident team leader for World Bank financed urban development projects in Sana’a and Hodeidah.

Colonel Ahmed al-Akwa

Governor
YEMEN ARAB REPUBLIC

Sana’a

Governor of Sana’a.

Qadi Ali Abu Rijal

Jurist
YEMEN ARAB REPUBLIC

Sana’a

Deputy Chief of the President’s Cabinet. Former Governor of Hodeidah.

Dr. Abdel-Halim I. Abdolahim

Architect/Planner/
Instructor
EGYPT

Community Design Collaborative
61, Mohy Eldin Abou El Ezz St.
Dokki — Cairo
Egypt

Assistant professor of Architecture, Cairo University.
Founder and principal of the Community Design Collaborative, in Cairo and Oakland, California. Current work includes community design projects. Member of 1983 Award Technical Review Team.
His Excellency Qadi Ismail al-Akwa
Jurist/Scholar/Archaeologist
YEMEN ARAB REPUBLIC

Sana’a
President of the Organisation of Antiquities and Libraries.

Mr. Jim Antoniou
Architect/Planner
UNITED KINGDOM

Jim Antoniou and Associates
38, Farrer Road
London N8
England

Senior partner of Jim Antoniou Associates, consultant in aspects of physical planning and architecture in developing countries. Regular contributor to Middle East Construction on the theme of development impact.

Mr. Muhammad Qassem Aoun
Contractor
YEMEN ARAB REPUBLIC

Sana’a

Pr. Mohammed Arkoun
Historian
ALGERIA/FRANCE

3, place de l’Étoile
F—91210 Draveil
France

Director of the Institute of Arab and Islamic Studies and holder of the Chair of the History of Islamic Civilisation and of Arab Literature at the Sorbonne, Paris.

Specialist in the relationship between contemporary Islam and classical Islamic civilisation.

Principle publications include L’Humanisme arabe, Essais sur la pensée islamique, la Pensée arabe, Lectures du Coran, and Pour une critique de la raison islamique.

Member 1983 Award Steering Committee.

Dr. Muhammad Said al-Attar
Socio-Economist
YEMEN ARAB REPUBLIC

United Nations Economic Commission for Western Asia
Saadaun Street
Post Box 27
Khartoum Baghdad
Iraq

Executive Secretary of the United Nations Economic Commission for Western Asia (ECWA).

Former permanent representative of the Yemen Arab Republic to the United Nations, New York.

Mr. Rémy Audouin
Archaeologist
FRANCE

French Archaeological Mission
Sana’a

Chief, French Archaeological Mission in Yemen.

Mr. Salah Aziz
Economist
YEMEN ARAB REPUBLIC

Ministry of Economy
Sana’a

Deputy Minister of Economy to the Yemen Arab Republic.

Mr. Jon Bjørnussen
Architect
NORWAY

Sana’a

Architect to the Dutch Restoration Project in Reda’a.

Dr. Mounir Bouchnak
Archaeologist/Administrator
ALGERIA

c/o UNESCO
Division du Patrimoine Culturel
7, place de Fontenoy
75700 Paris
France

Project Officer, Division of Cultural Heritage, UNESCO, responsible for the conservation of historical monuments, quarters, and sites, and the development of museums in the Arab States.

Former Director of Archaeology and Museums, Ministry of Culture, Algiers.

Mr. Sherban Cantacuzino
Editor/Architect
UNITED KINGDOM

Royal Fine Art Commission
2, Carlton Gardens
London SW1Y 5AA
England

Secretary, the Royal Fine Art Commission. Former executive editor of Architectural Review. Author and teacher, works include New Uses for Old Buildings.

Member of 1980 Award Master Jury and current member of Award Steering Committee.

Mr. Rifat Chadirji
Architect/Planner
IRAQ

992, Memorial Drive
Apt. No 604
Cambridge, Mass. 02138
USA

Advisor to the Municipality of Baghdad.

Major works in private practice include the National Theatre, Abu Dhabi.

Recipient of numerous architectural awards.

Member of 1983 Master Jury.
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Country</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Christopher Dammers</td>
<td>Administrator</td>
<td>DK</td>
<td>4, ch. Khaliquzzaman Road (Gizri Road)</td>
</tr>
<tr>
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<td>Ms. Marie-Christine Danchotte</td>
<td>Archaeologist</td>
<td>FR</td>
<td>French Archaeological Mission</td>
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<tr>
<td>Mr. Charles Delaney</td>
<td>Architect</td>
<td>IE</td>
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<td>Architect to Oxfam.</td>
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<tr>
<td>Mr. Werner Dubach</td>
<td>Geographer</td>
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<td>Ministry of Public Works</td>
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<td>Geographer to Survey Department, Ministry of</td>
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<td>Public Works.</td>
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<tr>
<td>Mr. Frédéric Edelmann</td>
<td>Journalist/Architectural Critic</td>
<td>FR</td>
<td>Le Monde</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5, rue des Italiens</td>
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<td>Ms. Elizabeth Gascogne</td>
<td>Health Specialist</td>
<td>DK</td>
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<td>Sociologist to Oxfam.</td>
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<td>Dr. Tomas Gerholm</td>
<td>Social Anthropologist</td>
<td>SE</td>
<td>University of Stockholm</td>
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<td>Faculty of Social Anthropology</td>
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<td></td>
<td></td>
<td></td>
<td>10691 Stockholm</td>
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<td>Assistant professor in the Department of</td>
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<td>Social Anthropology, the University of</td>
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<td>Stockholm. Several years’ experience in the</td>
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<td>Yemen Arab Republic.</td>
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<td>Member of the editorial staff of <em>Ethnos</em>,</td>
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<td>an anthropology journal published in English</td>
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<td>by the Ethnographic Museum in Stockholm.</td>
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<td>Extra-ordinary member of the Board of the</td>
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<td>Scandinavian Institute for Asian Research,</td>
</tr>
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<td></td>
<td>Copenhagen.</td>
</tr>
</tbody>
</table>
Sheikh Abdurrahman al-Hadrami
Man of Letters YEMEN ARAB REPUBLIC
Zebid
Leading Citizen of Zebid.

Pr. Abbas Hamdani USA
Institute of Ismaili Studies
14/15 Great James Street
London WC1N 3DP
England
Visiting research fellow, the Institute of Ismaili Studies, London.
Former Chairman of the Committee for Middle Eastern and North African Studies, the University of Wisconsin.

Ms. Afrah Hammami Researcher YEMEN ARAB REPUBLIC
Centre of Yemeni Studies Sana’a
Researcher to the Centre of Yemeni Studies.

Mr. Hassan al-Hubaishi Engineer YEMEN ARAB REPUBLIC
Ministry of Municipalities and Housing Sana’a
Engineer to the Ministry of Municipalities and Housing.

Mr. Bernard Huet Architect FRANCE
38, rue Jacob
75006 Paris
France
Member of the Commission des Abords, Monuments Historiques de France.

Mr. Loufti Hujayra Engineer YEMEN ARAB REPUBLIC
Ministry of Municipalities and Housing Sana’a
Director of Planning, Ministry of Municipalities and Housing.

Dr. Saad Eddin Ibrahim Professor EGYPT
American University Sociology Department
113, Kar El-Ainy Street
Cairo
Professor of Sociology, American University, Cairo
Head of Arab Affairs at Al-Ahram Centre for Political and Strategic Studies
Publications include: Kissinger and the Middle East; Trends of Arab Public Opinion Toward Arab Unity; The New-Arab Social Order.

His Excellency Administrator YEMEN ARAB REPUBLIC
Prime Minister
Yahya al-Iryani
Deputy Governor of Sana’a.

Mr. Hasan-Uddin Khan Architect/Planner PAKISTAN
Mimar
19 Tanglin Road #06-52
Singapore 1024
Editor of Mimar: Architecture in Development. Formerly in private practice in Pakistan. Former Convenor of the Award and current member of the Award Steering Committee.

Pr. Mübesch Kiray Sociologist TURKEY
Süsen Sokak No. 4
Yesilyurt
Istanbul
Turkey
Professor of Sociology, the Department of City Planning, Istanbul Technical University. Former professor and head of department of sociology at Middle East Technical University. Numerous publications in Turkish and English including: Squatter Housing: Far De-Peasantisation; and Slow Workerisation in Underdeveloped Countries. Member of 1983 Award Master Jury.
Mr. Bahalchandra Kulkarni  
Engineer  
INDIA

Kanchan Ganga  
Halbhavi Marg  
Kalyan Nagar  
Dharwad 580 007  
India

Expert, United Nations, Habitat.  
Experience in the preparation of engineering projects, reports, housing schemes, and in the supervision of the construction of roads, buildings, structural designs, and financial management and office establishment.  
Former project manager of the United Nations Systems for the Institutional Support project, the Ministry of Public Works, Yemen Arab Republic.  
Publications include Design and Construction of Shell Roofs.

Dr. Mohammad S. Makiya  
Architect  
IRAQ

Makiya Associates  
26, Westbourne Grove  
London W2 5RH  
England

Founder and principal, Makiya Associates.  
Many public and private projects in the Middle East.  
Co-founder of the Department of Architecture at Baghdad University.  
Author of The Architecture of Baghdad: an Historical Survey.  
Member of 1983 Award Steering Committee.

Dr. Abdul Aziz al-Maqaleh  
Man of Letters  
YEMEN ARAB REPUBLIC

University of Sana’a  
Sana’a

President of University of Sana’a.

Pr. Ronald Lewcock  
Architect  
AUSTRALIA

Clare Hall  
Cambridge, CB3 9AL  
England

Specialist in conservation and restoration.  
Director of Research in Islamic Art and Architecture at the Middle East Centre, the University of Cambridge.  
Publications include: Sana’a, an Arabian Islamic City; and Two Early Mosques in Yemen.  
Member of 1983 Award Technical Review Team.

Pr. Charles Moore  
Architect  
USA

Urban Innovations Group  
1063 Gayley Avenue  
Los Angeles  
California 90024  
USA

In private practice, major works include: Sea Ranch Condominiums; the University of California Faculty Club; and St. Joseph’s Fountain, the Piazza d'Italia, New Orleans.  
Former chairman of the architectural programme at the University of California, and at Yale University.  
Publications include: The Place of Houses; and Body, Memory, and Architecture.  
Member of 1983 Award Master Jury.

Mr. Werner Lingenhau  
Architect  
FEDERAL REPUBLIC OF GERMANY

Sana’a National Museum  
Sana’a

Architect to the Sana’a National Museum.

Mr. Abdullah Muheizee  
Historian/  
Administrator  
YEMEN ARAB REPUBLIC

UNDP  
P.O. Box 33  
Crater, Aden  
People’s Democratic Republic of Yemen

Current Director of the Yemeni Centre for Cultural and Archaeological Research.  
Former Ambassador to India.
Mr. Kamil Khan Mumtaz
Architect/Planner
PAKISTAN

BKM Associates
25, Zaman Park
Sunderdass Road
Lahore
Pakistan

Senior partner, BKM Associates.
Former professor and head of the Department of Architecture, the National College of Arts, Lahore.
Work in urban design and planning, the history of architecture in Pakistan, and the planning and conservation of historical buildings and the built environment.
Member of 1983 Award Steering Committee.

Mr. Michael Murphy
Instructor
USA

University of Sana’a
Sana’a

Lecturer in English, University of Sana’a.

Ms. Zeynep Oral
Journalist
TURKEY

Milliyet
Nuruosmaniye Caddesi 65
Istanbul
Turkey

Editor of Milliyet Sanat Dergisi, Milliyet Arts Journal.

Dr. Suha Ozkan
Architect
TURKEY

Aga Khan Award for Architecture
32, chemin des Crêts-de-Pregnay
1218 Grand-Saconnex
Switzerland

Former associate dean and vice-president of METU, Ankara. Taught in Turkey and in the USA.
Assistant Secretary General of the Award.

Pr. William Porter
Architect/Planner
USA

School of Architecture and Planning
Massachusetts Institute of Technology
Cambridge, Mass. 02139
USA

Professor of Architecture and Planning and former dean of the School of Architecture and Planning at MIT.
Co-director, Aga Khan Program for Islamic Architecture of Harvard and MIT.
Co-editor, Places, an interdisciplinary journal of environmental design.
Former president of the National Architectural Accrediting Board.
Member of 1980 and 1983 Award Steering Committee.

Mr. al-Izyy Mohammed Muslekh
Archaeologist
YEMEN ARAB REPUBLIC

Department of Antiquities
Sana’a

Director of Technical Affairs, Antiquities Organization.

Dr. Abou Bakr al-Qurbi
Physician
YEMEN ARAB REPUBLIC

University of Sana’a
Sana’a

Dean of the Faculty of Sciences, University of Sana’a.

Ms. Selma Radi
Archaeologist
IRAQ

Reda’a
Head, Dutch Archaeological Team in Reda’a.

Mr. Luo Renxiong
Architect
CHINA

Sana’a
Manager of Design, Yemeni Chinese Construction Engineering Co. Ltd.

Mr. Abdullah al-Saidi
Engineer/Architect
YEMEN ARAB REPUBLIC

Ministry of Municipalities and Housing
Sana’a

Architect to the Ministry of Municipalities and Housing.

Dr. Abdul Ariz al-Sakkaf
Economist
YEMEN ARAB REPUBLIC

University of Sana’a
Sana’a

Professor, Faculty of Commerce, University of Sana’a.

Dr. Gert Fuin
Restorer
FEDERAL REPUBLIC OF GERMANY

Sana’a

Member of German Restoration team for Arabic manuscripts.
Seminar Participants

Dr. Sayed Mustafa Salem
Historian
YEMEN ARAB REPUBLIC

University of Sana’a
Sana’a
Professor of History, Faculty of Letters,
University of Sana’a.

Dr. Abu-Bakr al-Saqaf
Philosopher
YEMEN ARAB REPUBLIC

University of Sana’a
Sana’a.
Professor of Philosophy, Faculty of Letters,
University of Sana’a.

Ms. Mildred Schenertz
Architect/Journalist
USA

Architectural Record
1221 Avenue of the Americas
New York, N.Y. 10020
USA

Executive Editor, Architectural Record.
Recipient of the National Magazine Award of
Columbia University’s Graduate School of
Journalism, for outstanding achievement in
specialised journalism.
Editor and contributor to several books and
architecture.
Visiting lecturer, the Yale University School of
Architecture.

Dr. Ismail Serageldin
Architect/Planner
EGYPT

The World Bank
Chief, Urban Projects Division
1818 H Street
Washington DC 20433
USA

Chief of the Urban Projects Division for
Europe, the Middle East, and North African
Regions, the World Bank.
Member of 1983 Award Master Jury.

Mr. Ibrahim Shabbouh
Historian/
Art Conservator
TUNISIA

Alecso
Avenue Mohamed V
Tunis
Tunisia

Chairman of the Arab League Education,
Culture and Scientific Organisation (Alecso)

Mr. Roland Simouneff
Architect/Planner
FRANCE

22, rue de Grenelle
75006 Paris
France

Professor at the School of Architecture in
Algiers.
Former member of the Fondation Le Corbusier.
Major architectural works located in Algeria
and France.
Member 1983 Award Master Jury.

Mr. Jacques Sirvain
Architect
FRANCE

UNCHS/Habitat
P.O. Box 30030
Nairobi
Kenya

Advisor to the technical cooperation division of
United Nations Centre for Human
Settlements, UNCHS/Habitat, for Africa,
Western Europe, and Asia.

Mr. John Swanson
Social Researcher
USA

American Centre for Yemeni Studies
Sana’a
Researcher to the American Centre for Yemeni
Studies.

Ms. Lealan Swanson
Social Researcher
USA

American Centre for Yemeni Studies
Sana’a
Researcher to the American Centre for Yemeni
Studies.

Dr. Salah Shehata
Architect/Planner
EGYPT

24, El-Fawakhs St.
Mohandessin
Dokki-Cairo
Egypt

President of Shehata Consulting Bureau,
Consultant to the World Bank, International
Development Association, and the Fund for
Financing Ministry of Foreign Affairs
Buildings Abroad, Cairo.
Professor of Architecture, Al-Azhar University,
Cairo.
Former leader of the World Bank School
Building Program in Yemen.
Publications include “Analysis and Cost
Escalation of Building, Materials and
Labourers in Yemen Arab Republic” and
“General Technical Specifications — Yemen
Arab Republic”.

Mr. Muhammad al-Tayeb
Engineer/Planner
YEMEN ARAB REPUBLIC

Sana’a
Deputy Minister of Municipalities and Housing.
Mr. Fernando Varanda  Architect/Planner  PORTUGAL
Av. Conde Valbom 2–1º Dto.
1000 Lisbon
Portugal
Architect and town planner for the town and county of Mértola, Portugal
Coordinator with the School of Architecture in Lisbon for the re-habilitation of the old walled nucleus of Lisbon.
Former UN volunteer for the UNDP Town Planning Project with the Ministry of Municipal Affairs, Sana’a.
Author, The Art of Building in Yemen.

Ms. Rosalind Waden  Archaeologist  UNITED KINGDOM
Department of Antiquities
Sana’a
Archaeologist to the Department of Antiquities.

Mr. Parid Wardi Sudin  Architect  MALAYSIA
University Teknologi Malaysia
Jalan Gurney
Kuala Lumpur 15-01
Malaysia
Dean of Research at the University of Technology of Malaysia.
Currently preparing, with Prof. Etherington, “Low Cost Housing and Community Development”.
Has conducted research into the relationship between cultural values and architectural design in contemporary Asian societies. Member of 1983 Award Master Jury.

Mr. Michael Welbank  Architect/Planner  UNITED KINGDOM
Shakland Cox
16, Bedford Square
London WC1B 3JH
England
Partner, the Shankland Cox Partnership, planners, architects, economists and transport engineers.
Advisor to the French government for new town development, to the Egyptian Antiquities Organisation on the environmental protection of antiquities’ sites, and to the Egyptian Development Agency.
Completed a UNESCO conservation study for the historic city of Sana’a.

Dr. Manfred Wenner  Political Scientist  SWITZERLAND/USA
American Institute for Yemeni Studies
Northern Illinois University
Dekalb, Illinois 60115
USA
Associate professor of Political Science, Northern Illinois University.
Current President of the American Institute for Yemeni Studies.

Mr. Huang Yuanpu  Architect  CHINA
Sana’a
Engineer to the China State Construction Engineering Corporation.

Dr. Said Zulfiqar  Historian/Conservationist  EGYPT
The Aga Khan Award for Architecture
32, chemin des Créts-de-Pregny
1218 Grand-Saconnex
Switzerland
Former UNESCO project officer, Division of Cultural Heritage, and former resident project manager of projects for the renovation of the Egyptian Museum of Antiquities, Cairo, and for the re-organisation of the Museum of Islamic Art.
Secretary General of the Award.

Mr. Yan Zhixing  Engineer/Architect  CHINA
Sana’a
Engineer to the China State Construction Engineering Corporation.
Our epoch, more so than any other, is a period of profound and accelerated transformations, not the least of them being the radical change of the built environment. The developing countries have been experiencing a rapid transformation of architectural expression over the past three or four decades as a result of the influence of economic expansion, modern technology and the media. This trend is reflected in the hegemony of unimaginative and repetitious forms of architecture, stemming from the adoption of the lowest possible common denominators of architectural conformity and banality. Standardisation of architectural styles in turn leads to the loss of cultural characteristics and of authenticity in design concepts. Yet it is the fundamental authenticity and diversity of cultural life, of which the built environment is a tangible component, that define the cultural identity of a community, and the objectives of the Aga Khan Award for Architecture are based on the preservation of cultural identity.

The recognition and assertion of cultural identity has indeed become one of the fundamental demands made today by Muslim peoples. It follows that economic and technological progress, urban expansion and building programmes, should on no account be achieved at the cost of jeopardizing or sacrificing this identity. However, this assertion of an identity, which finds its inspiration in the cultural past and in the ecological reality, should not be viewed as a romantic attachment to a vanishing or extinct past. Rather, it should be regarded as a necessary phase in the reappraisal process of the forms of a culture. This phase can only be reached after a certain amount of experimentation with novel concepts and techniques has been attempted. In the course of experimentation obsolete elements are discarded as being no longer relevant to contemporary conditions. In this way, the real significance of asserting the cultural identity of people in the Muslim world will lie in the use of the past as a source of inspiration for the use of appropriate techniques and for the development of imaginative styles in contemporary architecture. If it is conceived with imagination and sensitivity, this environment can be a cultural creation adapted to the needs and aspirations of its inhabitants.

Unfortunately, however, in our part of the world, this sensitivity is just the factor which has been lacking. Up to now, the relationship which man has established with his environment can only be described as "conflictual". The options and directions that guide and determine the physical planning of cities always end up affecting both the national environment and ultimately human life. The results we see around us are seldom happy or successful.

One of the major dilemmas confronting urban planners is how to arrive at a type of architecture and of town-planning which is capable or revitalising lifeless settlements. These have been abstractly designed by professionals lacking in cultural and social consciousness. Their designs, be they banal or sophisticated in form, may seem logical and orderly from an outsider's viewpoint, but more often than not they are culturally irrelevant, environmentally inappropriate, expensive to build and even more so to maintain and operate.

How can we counter the unimaginative uniformity we find in current architectural design? How can we create settlements and towns that are conducive to harmonious human relationships and to social solidarity? Recent experience demonstrates that operations designed to improve the environment by purely technical methods do not succeed unless they take into account the interrelationships between people and their environment.

Architecture and town planners have reciprocal relationships with social structures, as well as with the cultural intellectual, emotional and moral development of individuals. And, it is also becoming increasingly recognised that sociologists and historians as well as professionals in many other disciplines have an essential
contribution to make to the process of urbanisation, if this process is to lead to the enhancement of the quality of life and not merely to the provision of shelters. The principal problem for those who are concerned about the deterioration of the built environment is how best to help people at all levels to make sound choices and decisions which raise the quality of life. In this endeavour, frankly speaking, we are at a serious disadvantage since, in our part of the world, public awareness of environmental problems — particularly awareness of the ugliness, of the alienating effects and of the irrelevance of architectural expression — is still not crystallised.

In a number of industrialised countries, environmental problems have been brought to the public attention by the mass media, and have been elevated to become community or national issues after acting in close collaboration with community and grass-roots groups. In our part of the world, however, pioneering actions are unfortunately still very few in number, and they have been undertaken by courageous individuals or by non-governmental groups and associations. These people are striving with great difficulty to win the interest and support of the media and of the governing bodies. The Aga Khan Award for Architecture is one such pioneering group which seeks to generate and promote public awareness of the current problems of the built environment. It endeavours, above all, to demonstrate that progress and modernity in the field of building can be achieved by means other than the passive adoption of design concepts copied from foreign models.

Promoting designs in harmony with the cultural and environmental context, the Award, we hope, will become an on-going process, a dynamic force aimed at influencing the transformation of the built environment and proposing relevant forms of contemporary architecture for Islamic countries.

Our presence today in Yemen is not fortuitous. In the Islamic world, Yemen is the country whose architectural heritage is best preserved, whose cultural authenticity is still predominant, and whose traditions are the most vivid. In this sense Yemen is unique. But this uniqueness is in jeopardy because, in the world we live in, a country cannot survive isolated and unresponsive to change and modernity. In order to keep abreast with what is commonly called “progress”, Yemen has to digest and assimilate new ideas, methods and technologies coming from outside its boundaries.

During the course of this seminar, we shall be discussing whether these new ideas and technologies should be accepted blindly, without being critically analysed beforehand, or adapted to local circumstances, both cultural and environmental. The incomparable heritage of Yemen is in danger of being undermined and its built environment disfigured, as has happened in neighbouring countries where uncritical acceptance of foreign models has resulted in cultural alienation and loss of identity. If this were to be repeated in this country, it would not only be an irreparable loss to the world, but it would also imply that Yemen will have gained little in exchange for giving up what is culturally worthwhile and architecturally appropriate.
Your Excellency Prime Minister al-Iryani, Your Highness The Aga Khan, distinguished guests and participants. In recent years, Sana’a has witnessed a number of conferences and seminars in various fields, including the ninth session of the Arab Conference in Architecture, which is held every two years under the auspices of the Arab Organisation for Education, Culture and Science. The Ninth Conference was devoted to the theme of Islamic monuments. Today we witness the convening of the Seminar on “Modernity and Tradition”, the eighth of the Aga Khan Award Seminars on Architecture in the Islamic World.

All this activity has been very timely. This seminar has been convened at a time when the government of the Yemen Arab Republic is most concerned about the architectural heritage of the country and particularly of Sana’a. The government, through its various departments, is introducing measures to protect Sana’a from distortion under the impact of architectural transformation, and to preserve its character and identity while taking into consideration the necessities of modern life. Thus it is intended to utilise modern methods to upgrade the urban environment even while preserving the heritage.

Until recently we Yemenis did not have an appreciation of our architectural heritage. The people of Sana’a, and indeed the people in many Islamic countries did not feel that their cities contained anything that was worth preserving. After the Revolution of 1962 there began an intense building activity and people began building outside the city walls. There were no controls and everyone built according to one’s own taste and means, following different methods and using materials one felt like using. This haphazard building did much damage to the environment.

There were no government plans or guidelines for new buildings until voices were raised and appeals were heard from those who came to Yemen after the Revolution. Foreign scientists, architects and experts registered their concern with our heritage.

They praised the beauty of architecture, the type of buildings and the traditional methods of building in Sana’a. We thus began to exert efforts to preserve what remains of the city walls and gates in collaboration with other government departments and international organisations. We found in UNESCO the best support and expertise to draw up comprehensive plans for the conservation, maintenance and restoration of historical monuments, buildings and relics.

It is expected that the Director General of UNESCO will issue an appeal next autumn for the preservation of Sana’a. I should also mention that the Italian government has been responsive to our needs and was the first government to announce its willingness to participate in the campaign to save Sana’a.

The government of Yemen Arab Republic has not limited its conservation efforts to Sana’a alone. Four million Yemeni rials have been allocated for the restoration and preservation of Allah al-Shafia School. It is also hoped to preserve and maintain other schools in collaboration with UNESCO and the Dutch Government. At present restoration work is continuing in Thula.

This is just brief a glimpse into the activities of the Yemeni Government to preserve the architectural heritage of our country. But this is just a beginning. Before us is a long list of cities and buildings that need our attention, such as Jibla and Zabid, and the Mosque of al-Saidi. The beauty and originality of Yemeni architecture have become known around the world. We recognise that our heritage, as rich as it is worthy of being maintained, deserves our fullest attention.
Opening Remarks

Jacques Sirvain

It is a great honour for me to address the international seminar on "Modernity and Tradition", and to have the opportunity to convey to you the greetings of Dr. Arvot Ramachandran, the Executive Director of the United Nations Centre for Human Settlements. We would like to thank the Government of the Yemen Arab Republic for hosting this seminar in Sana'a and the Aga Khan Award for Architecture for organising it. The Centre for Human Settlements, Habitat, is looking forward to seeing the results of this seminar and hoping that the discussions here will lead to a useful contribution to the development of Human Settlements throughout the Islamic world and to the conservation of its heritage.

The theme of this seminar is most significant, and Sana'a is a most appropriate place to hold such a seminar. During centuries of isolation Yemen has developed a strong traditional character because there were only gradual changes, slow evolution and relatively easy adaptation. However, with the recent opening of the country to the outside world, the Yemen Arab Republic is experiencing great transformations at an unequalled pace concomitant with important and even shocking structural adjustments. In so far as human settlements sector is concerned, these transformations have resulted in mass migration to urban centres leading to the decay of old medinas with the appearance of inner city slums and of squatter settlements at their peripheries. The adjustments have entailed inappropriate use of imported technology, and the copying of unsuitable urban plans and architectural forms. Action at different levels of intervention can be envisaged to cope with these problems. Human settlements policies and strategies should be defined, and new planning models should be introduced and implemented with a view to correcting the errors of the past. There must be a search for more efficient forms of settlements that are also more responsive to the aspirations of the people than those we have had to date. It is important that the developing countries are

beginning to appreciate their indigenous urban and architectural forms, overcoming a sense of inferiority which led them until recently to copy from developed countries. The urban and architectural forms they imported were usually inappropriate and unnecessarily costly.

Furthermore, there is an urgent necessity to formulate and implement innovative programmes for the provision of low-cost housing and related infrastructure, facilities and services using appropriate technologies. Attention must be paid to the human aspect of environmental design providing settlements with which people can identify. The challenge is a formidable one, since more housing and related infrastructure will be needed in the next two decades than had been in the previous millennium.

- Research and development must be undertaken to provide new models;
- Proper legislation and land use management are needed in order to encourage the application of appropriate technologies;
- Technicians and professionals must be trained to integrate social and cultural criteria in the design process;
- Channels of communication must be established to permit professionals, technicians, public authorities and people to learn from one another's experience;
- Indigenous construction industries should be supported in order to develop locally produced construction materials and components, because only these industries are likely to reach the low-income target groups;
- Skilled and semi-skilled labour forces have to be trained;
- Public participation must be developed or maintained in order to insure that the infrastructure, facilities, services and construction materials correspond to the needs of the people.

Historically, the shelter problem has always been solved by individuals without the involvement of public authorities. However, when settlements become larger, governments usually take responsibility and provide technical and capital resources needed for the provisions of land and infrastructure. Unfortunately such interventions have often tended to go beyond providing land and infrastructure to include shelters. Consequently, traditional mechanisms such as self help have ceased to be as effective. I have only touched briefly on a few of the basic issues concerning the future shape of built environment. I am confident that the conclusions and recommendations of this seminar will indicate ways of meeting the challenge of providing a humane physical environment. The international community in general and the United Nations Centre for Human Settlements in particular are acutely aware of this challenge. As you may know, UNCHS has a broad mandate in the field of human settlements. It has the potential to play an important role in mobilising world knowledge and resources as well as in implementing pilot and demonstration projects. I would like to assure you of its support for all undertakings aimed at solving the problems related to human settlements.
Opening Remarks

Mounir Bouchenaki

It is a great honour for me to represent UNESCO at this seminar. First of all, I bring you the greetings of the Director-General, who is deeply interested in the preservation of the cultural heritage in the Yemen Arab Republic. Since his last official visit here in December 1981, and in accordance with the wishes of the government of the Yemen Arab Republic and the decisions adopted at the twenty-first session of the General Conference of UNESCO, the Director-General has initiated a series of technical studies undertaken in this country. An appeal will be made to the international community in order to launch the International Campaign for Safeguarding the Old City of Sana’a. Financed by UNESCO, the plan of action for this campaign was prepared by multi-disciplinary mission from the International Council on Monuments and Sites (ICOMOS) with the participation of Professor Ronald Lewcock.

Other efforts have been undertaken by UNESCO to help safeguard the rich cultural heritage of this country. Since 1978, UNESCO has provided consultants to advise the government of the Yemen Arab Republic on matters related to the restoration of monuments. Financial and technical support was provided for the restoration of the Zafar Dhi Bin Mosque, one of the most famous in the country. We are pleased to announce that this project has been completed in close cooperation with the Organisation of Antiquities and Libraries. There are numerous other activities for the preservation of the cultural heritage of the Yemen Arab Republic. I would like to stress that all such activities have been made possible by the fruitful cooperation that exists between the government of the Yemen Arab Republic and UNESCO.

I would also like to point out that in order to preserve the historical architecture of Sana’a and its urban environment, the government of the Yemen Arab Republic has not only decided to launch an emergency programme to curtail further damage and deterioration to its cultural heritage but also to restore and infuse new vitality into the old city of Sana’a. Nowhere in the world is there such a high proportion of fine urban housing as there is in Sana’a, where only until recently low-income housing was completely unknown. There is no doubt that the government’s determination to safeguard the cultural heritage of the country and of the capital city constitutes the most striking feature of that heritage.

In the name of the Director-General of UNESCO, I am particularly pleased to convey sincere congratulations to all the representatives of the Aga Khan Award for Architecture and in particular to His Highness The Aga Khan for having organised this fruitful seminar in one of the oldest cities of the world. I would also like to express my deep gratitude to the officials of the government of the Yemen Arab Republic, in particular to His Excellency the Prime Minister and to Qadi Ismail al-Akwa, Director of the Organisation of Antiquities and Libraries, who have greatly contributed to UNESCO’s work on the preservation of cultural heritage.

The souq at Sana’a.

Photo: C. Little/Aga Khan Awards.
Opening Remarks

His Excellency Prime Minister Al-Iryani

It gives me great pleasure to welcome you on behalf of His Excellency Ali Abdullah Saleh, President of the Yemen Arab Republic, and on behalf of the people of Yemen, and to welcome you in my own name. The capital, Sana’a, is honoured to host this historic seminar in which a number of well known Arab, Islamic and international personalities are participating. Your choice to hold the eighth session of the Aga Khan Award seminars indicates your appreciation of our country’s rich cultural heritage, particularly that of our capital city. It is ancient heritage deeply rooted in Arab and Islamic culture.

The people of Sana’a, who are honoured by your presence, appreciate the commendable efforts of the Aga Khan Foundation to hold its seminars in a number of famous cities in the Islamic world, Istanbul, Amman, Jakarta and Lahore. In this way the whole world is informed about aspects of life in various Islamic countries in general and about life in major Islamic cities in particular.

We, Yemenis, are proud of our unique architectural heritage. It is rare to see so many different architectural styles in one country. Moreover, Yemenis themselves have shown a deep interest in their architecture. As every historian of Yemen knows, palaces, castles and forts of our country have assumed an important role in manuscripts, poems, and Yemeni legends, and in the legends and poetry of the Arab world in general.

Our country lived in total isolation from the outside world until two decades ago. After the Revolution of 26th September 1962, the Yemenis found themselves face-to-face with the technological, political, economic, and social challenges of the second half of the twentieth century. These challenges could have shocked the Yemeni people more than any other nation facing modernity. However, the originality of the Yemenis allowed our nation to absorb the rapid advances of our age while preserving its culture and heritage. Among our achievements has been the conservation of various architectural forms and types. But national consultants responsible for the implementation of development projects. It is worth stressing that in general terms received technology and methods are better and more suitable than modern technological means because they originate in the environment. Because of developed communications, technology transfer has become easier and faster in the twentieth century. But it has led to the adoption and literal imitation of technologies and methods of development that are alien to the need of many societies. Many countries have adopted means of development that are in contradiction to their environments.

We, in the Yemen Arab Republic extend our hands to all organisations, and individuals concerned with the architectural heritage of Yemen and wish too cooperate with them in protecting and preserving this heritage. We believe that this heritage is not the property of the Yemenis alone; it is a heritage of all mankind. This seminar, organized and financially supported by the Aga Khan Award for Architecture, brings together experts from all over the world. It is a significant case of cooperation between nations and peoples working for the preservation of cultural heritage.

Our gathering here marks a new chapter in the cooperation among individuals, institutions, and organisations to make the Yemen Arab Republic an example for the achievement of modern development along with maintaining cultural continuity.
Opening Remarks

His Highness The Aga Khan

It is a great pleasure to be here today for the opening of an architectural seminar in a country whose heritage is so justly famous. But let me begin these comments by congratulating His Excellency the President in the name of all the participants and my own name for his unanimous re-election to the Presidency. We pray that Allah may grant the President all happiness, success and good health in serving the people of Yemen and we believe such an important and happy event on the eve of this gathering augurs well for our discussions and endeavours. I know I can speak for everyone of the many distinguished participants in paying tribute to His Excellency, the Prime Minister and His Excellency the Director of the Organisation of Antiquities and Libraries for the help and encouragement that they, and government officials at all levels, have given to the organisation of the discussions and site visit which will occupy us for the coming days.

It was a little over five years ago, in April 1978, that the first seminar organized by the Aga Khan Award for Architecture in the spirit of Islam was opened. Few among the participants will forget the excitement it generated not merely for the contents of its deliberations, but for the prevailing sense that a new concern and a new awareness have come into being. The concern was for the environment that a rapidly changing Muslim world was creating for itself: was it the environment that its own varied traditions, its real rather than fictitious needs, and its own sense of cultural dignity and autonomy required? The awareness was of the existence of men and women, practitioners or thinkers, Muslims or not, who had thought about these issues, who had asked questions, who had sought information and ideas to help them resolve specific problems or meditate on broader philosophical implications of a Muslim’s life in a shrinking world.

Out of this concern and of this awareness have grown six additional seminars dealing with topics as different as symbolism and housing; all have been published as a series

Mosque at Thula, Yemen Arab Republic.
Photo: C. Litle/Aga Khan Awards.
of documents on our continuing process of thinking. And in 1980 the first series of the Aga Khan Award were given to recognise and reward fifteen buildings and activities which seemed to an international jury to exemplify the searches for solutions which satisfied a universal test of architectural quality, a no less universal sense of enhancing the value and dignity of human life, and the more unique test of fitting within a Muslim way and a Muslim tradition.

This year a second jury will once again select a number of completed projects for a similar kind of recognition. Whatever the judgements of the jury may be, the search for ideas, the continuing critical examination of what is happening in the environment, the exchange of information, even debates between opposing points of view must continue. For, even though we shall not — nor do we want to — come to a single truth or a single doctrine about architecture and planning, the more we discuss these matters, the better equipped we shall be individually or collectively to meet the challenge of our time and to help the communities of the faithful and, by extension, of all mankind.

It is for this continuing discussion and for this continuous learning that we have gathered here for the eighth seminar in the series sponsored by the Aga Khan Award, on the general theme of "Architectural Transformations in the Islamic World". This seminar is dedicated to considering the impact of development on architecture and urbanism and, as you will have seen from the agenda, the working papers cover not only various aspects of the impact which modern constructional techniques and taste are having on traditional architectural styles and methods, but also the wider issues of planning on a national scale and of reconciling conservation with the requirements of development. These are certainly questions which are of crucial importance to planners and governments throughout not only the Muslim community but the entire world, for more buildings have been built by mankind since 1945 than in all the preceding centuries.

The old Islamic world possessed a strong civilisation which expressed itself in good architecture, which both improved and inspired the lives of ordinary people and which represented important things to them. We have to maintain our links with this historic heritage, yet not deny ourselves those contributions which modern technology can make to improving the quality of people’s lives.

Architecture is, after all, a practical art and I am particularly happy at the number of site visits incorporated in the programme for this seminar, since as I said a moment ago, we are privileged to be meeting in a country with a magnificent architectural heritage. Nor is it an accident that, for the second time, the seminar which precedes the ceremony of the Aga Khan Award for Architecture is being held in an Arab country.

Three years ago it was Amman; today it is Sana’a. In the extraordinary story of the birth and spread of Islam, the part played by Yemen was unique indeed. Medieval chronicles and poets have described its brilliant pre-Islamic civilisation, with lofty palaces topped by elaborately decorated cupolas and sculptures of roaring lions. The castles of Ghamdan and the Ma’rib dam are only part of a rich and ancient inheritance. It was a Yemeni cloth which for a long time covered the Holy Ka’ba.

Yemen was the richest province of the Arabian peninsula and, after the Yemeni tribes’ acceptance of the Divine Message, it was Yemenis who, together with the northern and central Arabian peoples, spearheaded the first expansion of the faith from Spain to Central Asia. In Cordoba, Damascus or Bukhara, Yemeni memories were a major part of that complex heritage of early Islam, in which Arabian traditions were woven with Mediterranean, Near Eastern and Iranian ones to create Islamic civilisation.

Today Yemen is once again facing an extraordinary challenge and opportunity within the Islamic world. It has preserved longer than many other lands a physical environment which has naturally evolved from its past. In popular literature it appears at times like the keeper of so much that was good and successful in the past, maintaining a harmonious equilibrium between nature and architectural forms within the context of a genuine cultural tradition. But, like all countries, it is now faced with challenges which are not entirely of its own making. There are new expectations in the world, whether we like them or not, and there are human, political, social and other pressures which must somehow be met. This is the first reason we are here, to learn how Yemen is handling these pressures and these needs. Let me hasten to add that we are not here to give advice, which would be presumptuous, nor are we here to pass judgement, which would not be proper. We are here, as in all our seminars, to understand, to feel and to learn.

If we are to succeed in our task of formulating a just equilibrium between external forces and the multiple expressions of Islamic traditions and Muslim peoples, we must understand the extent to which modern styles and forms are a mirage or a necessity. We need to feel because the statistics, graphs and drawings produced by experts all too often have little to do with the lives, habits and expectations of living of men and women.

Above all we need to learn from experience, discovering how both ancient and modern forms have evolved so that we can succeed in our task of creating an environment for the Islamic world which is both appropriate to its traditions and relevant to its future. The architectural environment of man is both a master and a servant. Because it is financially and economically an all but irreversible investment, it can become a tyrant dictating a way of life which is abhorrent or, at best, inflexible.

But, if fully thought out, it can become a perfectly adaptive setting in which man can grow according to the guidance of Allah to the fullest maturity of which his spirit is capable.
The transformation of traditional societies and the impact of change on the built environment have been two of the central concerns of the Aga Khan Award for Architecture. These topics are of particular relevance because the Award, from the very beginning, has been engaged in a search for better answers and more satisfactory solutions to the problems of preserving the cultural heritage while building for tomorrow's needs. This search has led to the reconsideration of some fundamental questions: does development inevitably force traditional societies to adopt alien forms? Does modernisation lead to social dislocations and loss of cultural values? And, ultimately do economic growth and development in general have to be inimical to the preservation of cultural heritage? It is with these questions in mind that the Award’s eighth seminar was organised in Sana’a.

Yemen has provided a uniquely appropriate setting to consider issues relating to “The Impact of Development on Architecture and Urbanism”. It is a country of enormously rich architectural heritage. Throughout their long history, the Yemeni people have developed a sophisticated art of building. Their indigenous building forms have been shaped by social, economic and ecological conditions of their society and region.

The architecture of Yemen varies somewhat according to the local building materials available in different areas. While in the central highlands stone buildings are predominant, in the valleys and flatlands combinations of stone and mud brick are normally used. But regardless of the area, traditional rural architecture displays a closely-knit, organic pattern. Clusters of tall buildings on high locations with commanding views enabled the inhabitants to defend their hamlets in the days of tribal warfare. These tall, narrow structures that reach unusual heights may range from simple watch towers to impressive residences. Yet they all share the same design, having store rooms and very few openings on the ground level, and living quarters with large
windows and spectacular views on the uppermost floors. The more majestic ones among these rural residences are notable for their facade treatments of stone work and fanlight fretwork.

The urban architecture of Yemen also reveals the predominance of defence considerations. Most of the larger towns and cities are fortified and verticality is as prominent in cities as it is in the countryside. The tightly-knit urban fabric with integrated commercial and residential quarters has the characteristic patterns of the traditional Islamic city. The narrow streets of the capital, Sana'a, are shaded by buildings five to nine storeys high with their elevations reaching fifty metres. At the street level are shops while the upper floors are residences. But here, too, the lower part of the facades, usually of stone, has few openings while the upper portions, built of baked brick with relief decorations, have large windows with plaster decoration around them. In the rear are vegetable gardens and orchards which belong to the AWQAF and assigned to specific mosques. This tradition of having agricultural land within urban areas also goes back to the days of tribal warfare when the residents of hamlets under siege had to produce their food within the fortifications.

But the traditional architecture and the urban pattern of Yemen is in danger of deterioration and even extinction. Since 1962, when the Government of Yemen Arab Republic was established, the country has evolved rapidly. With economic growth and increased communication with the outside world, a process of urbanisation and migrant labourer circulation has begun. Mountain towns and villages are becoming depopulated and the buildings there are turning derelict as a result of massive migration to urban areas. On valleys and flatlands as well, there are entire villages deserted. Meanwhile the rapid urbanisation poses a serious threat to the fabric of the cities. Housing shortage has resulted in construction of squatter settlements. Well-to-do clients have shown interest in modern construction technology, and cement blocks, contrasting sharply with the beautiful old buildings, have proliferated. Moreover, the lack of infrastructure in Yemeni cities has already been posing serious problems and any further crowding may be expected to cause serious deterioration of the quality of life.

As such the Yemen Arab Republic has begun to feel all the pains of growth. Its experience with the difficulties of rapid development has been recent but intense. Yet the Yemeni people are aware of and cherish their rich cultural heritage. For example, the persistence of facade decorations on cement buildings is an indication of their attachment to the traditional expression in architecture. Can their deeply rooted attachment to tradition mediate the forces of change?

The participants in this seminar were given an opportunity to observe the impact of change on urban and rural areas. Between the regular sessions and workshops site visits were organised to Rowdah, Wadi Dahr, Thula, Shibam, Kawkaban, Amran, Kohlan and Hajja lying to the north of the capital and Dhamar, Rada'a, Djibla and Ta'izz to the south. These site visits brought into sharper focus the wide range of issues treated by the contributors. Among the specific questions raised were:

- What are the social forces which have given rise to the modernisation in Yemeni culture?
- To which degree is modernisation in Yemeni society dependent on foreign expatriate presence?
- What are the existing architectural symbols of modernity in Yemen?
- Where do new technologies and shifting life-styles come into the conflict with the existing built environment?
- What are appropriate roles for foreign experts and by which criteria can foreign experts be selected?

This seminar, being the first in the series organised by the Award to focus exclusively on one Muslim country, has enriched the thinking of the Award on these issues of global significance. Through this publication it is hoped to contribute toward a greater awareness of the problems of urban development in traditional societies among a broader circle of architects, social scientists, planners and decision-makers.
The Impact of Development on Society and the Built Environment

*Said Muhammad al-Attar*

Our examination of the impact of development on society and the built environment should begin with an explanation of the terms “development” and “environment” in the context of this topic.

Development has been defined as “growth plus change”. As broadly conceived, it involves an increase in national income, a rise in the standard of living, the adoption of new technology, the acquisition of new skills and capabilities, changes in modes of thought and behaviour, occupational diversity, socio-economic reforms, the establishment of new institutions, and broader participation of the masses in development processes.

The goal of development generally is espoused in policy declarations of national governments and in the international community. Thus we hear about “national development plans” and “United Nations development decades”. Countries often are distinguished as “more developed” and “less developed” or “developed” and “developing”. There is further general agreement that some countries may develop faster than others over a period of time, that both desirable and undesirable concomitants are associated with development, and that the desirable ones should be deliberately promoted through government policy. Additionally, it is widely accepted today that development is at the same time an economic, social and political process.

Two major concepts recur in all definitions of development: 1) increased productivity, which will lead to increased income; 2) social justice in terms of a more equitable distribution of that income. The former is concerned with the way a society utilises its available resources and produces goods and services. The latter is concerned with the ability of the members of the society to participate meaningfully in the development and share in the consumption of the goods and services produced.

When we speak of “environment” in this context, we generally mean the “built environment”, or man-made environment. This concept encompasses human settlements in the broadest sense of the term. Concern for the human environment has grown in response to the pollution caused by the industrialised, “developed” countries of the world, particularly Western Europe and North America. In addition to the problem of pollution, there are the “nuisances” that disturb or perturb life in society without necessarily entailing casualties: noise, ugly buildings and overcrowding, to name a few. Pollution and nuisances are among the negative effects of development, and their elimination would enhance the quality of life. In this sense we do not mean the quality of life that material goods and services can secure but, rather, unqualifiable benefits such as the pleasantness of large green spaces within urban centres.
For historical reasons deriving from the colonial era, however, economic interests have long prevailed over environmental concerns in the development efforts of countries, including those belonging to the Economic Commission for West Asia (ECWA). Despite good intentions, the results of "planned development" often have been to aggravate imbalances in the development of various regions of a country and to widen the social and economic disparities among different segments of the population. For example, the concentration of investments in a few centres has created several problems. Most significant has been rural-to-urban migration, which has had detrimental effects on agriculture and food production and has created pressures on housing, transport, public utilities and services, and employment opportunities in urban centres. With these definitions of development and environment in mind, let us turn to an historic overview of Yemen and how the unique Yemeni planning and architectural genius has evolved to reflect its Islamic society and culture.

The Yemeni civilisation is among the most ancient Arab civilisations. Situated in the strategic southwestern corner of the Arabian peninsula, astride the main caravan trade routes between Asia to the east, Africa to the west and the Mediterranean countries to the north, the Yemeni soil has been the stage for countless wars, conflicts and turmoil. It is clear that Yemen was very much in the centre of events. History identifies the great Sheba and Himyar eras as pinnacles of pre-Christian and pre-Islamic civilisation, best known for their engineering, irrigation and construction feats. All in all, no fewer than twenty-seven successive kingdoms, dynasties, administrations and governments have left their marks in the Greater Yemen, each event and era adding its share to the rich Yemeni civilisation. Through its soldiers and military leaders and through the use of engineering skills developed there, especially in the construction of castles, Yemen has made a significant contribution in the history of Islam and of the world.

The conflicts and struggles that took place in Yemen during its long history, together with the scarcity of agricultural land and a varied topography, elevation and climate, have clearly left their mark on Yemeni town planning and architecture. The manifestations of military conflicts are the mountain-top towns and villages whose siting was dictated mainly by defence considerations and partly by the desire to conserve scarce land in the wadis for productive agriculture. At the level of the individual house, the lower storey was reserved for safe-keeping of animals and for storage of grain, fuel wood and equipment. Thus the house was capable of acting as a fortress against siege for prolonged periods of time.

During the long period of isolation that preserved the splendid cities of Yemen, the vast majority of the population lived, as they still do today, in widely scattered and isolated rural settlements, with urban areas serving as regional market and craft centres. But the Revolution of September 1962 opened a new chapter in the history of modern Yemen and initiated a process of development that has had far-reaching consequences.

The extent and magnitude of progress made can be gauged when it is remembered that until 1962 there were no modern secular schools, no hospitals, no clean piped water, no roads and, with the exception of the Imam’s and a few others, no motor cars. Today the major population centres in the country are interconnected by a road network totaling more than 2000 kilometres in length, and an additional 2600 kilometres are included in the current five-year development plan. Tens of thousands of cars of all description are on the roads carrying goods and
passengers. Travelling between Sana’a and Ta’iz, which only sixteen years ago took four days by car and twenty days by camel or mule, takes only a few hours today. Health-care measures in urban as well as rural areas are helping to wipe out disease, decrease mortality rate, and increase life expectancy at birth. Concerted efforts at both the government and grass-roots levels are providing education to an increasing number of boys and girls from kindergarten to the university and are helping to eradicate illiteracy among the older segments of the population. There are many such development activities and taken together these activities are breaking down many prejudices and misconceptions that were holding sway over the souls and minds of people during the dark days of isolation. Now the people are better fed, clothed and housed than ever before, thanks to an increased per capita income. The freedom to move about in the country and the means to do so, combined with more education and a higher level of prosperity, will consolidate and strengthen national unity. 

These are a few of what may be considered the positive aspects of development in Yemen. As regards the negative effects of development in the specific case of Yemen, there are no time series data to provide accurate indications of population growth, external and internal migration and changes in labour force. However, according to the 1975 census, still only about 7.5 percent of the country’s resident population lived in the six large towns with over 10,000 inhabitants (Sana’a, Ta’iz, Ibb, Hodeidah, Hajjah and Dhamar); 3.6 percent lived in medium-sized towns of 2,000 to 10,000 inhabitants; and 2.3 percent lived in small towns of 1,000 to 2,000 inhabitants. But there are indications that the largest cities are expanding rapidly and that they will continue to grow at a rapid pace for the foreseeable future. Between 1975 and 1980, Sana’a is estimated to have grown at a rate between 7.6 and 8.8 percent, Ibb at a rate of between 5.4 and 7.5 percent, and Ta’iz at a rate of between 5.0 and 5.5 percent. The average annual rate of all the cities with populations of 10,000 or more was between 6.1 and 7.7 percent. With an overall natural population growth rate of only 2.9 percent, two factors helped to bring this tremendous change in urban population in the Yemen Arab Republic. First, the employment opportunities generated by government investments in development projects created a significant movement of rural people in to urban centres. Second, coinciding with Yemen’s sudden emergence from isolation and opening up to its own self and to the world abroad, the extensive development programmes in the neighboring oil-rich countries had a tremendous magnetic pull on Yemeni manpower. The result has been the unprecedented migration of labour to Saudi Arabia and the Gulf states. Remittances from these migrants have fuelled an unprecedented construction boom in the major Yemeni cities. As a result, the city of Sana’a has grown more than five-fold in less than two decades. Most of this development is unguided by proper town planning, and Sana’a is in danger of losing its agricultural land as well as depleting its water resources, in addition to the fact that its infrastructure, essential utilities and social services would not be adequate. Environmental pollution is already a problem. Many questions beg to be answered. Unlike most developing countries of the world, the Yemen Arab Republic has been distinguished by the lack of overwhelming primacy of any one city. However, is that which we are witnessing today, the beginning of the end to that distinction? Is Sana’a on the way to becoming an uncontrollably large centre? Is there a limit beyond which a city should not be allowed to grow? What are the lessons to be drawn from similar situations in other countries?

The contrasts between the old and the new era are numerous and worthy of study. Confined for generations to their self-
Recent development on the outskirts of an established Yemeni town.

Photo: S. Özkân.

imposed isolation, the Yemeni people have evolved a particular brand of architecture that admirably suited their socio-economic, cultural, environmental and psychological needs. The following are some examples.

In Yemen the requirements of conservation of resources and security considerations gave rise to the need to expand vertically rather than horizontally and in the process to accommodate in one structure many members of the extended family. These houses traditionally were constructed of stone, bricks and wood, using local materials. The regulation of their environment is achieved by thick walls with a high capacity for absorbing the heat of the sun, which is then released to warm the inside of the building during the night. Ventilation to the top floors was provided through comparatively large windows, but the lower floors, where openings were small, were ventilated through the staircase and the lobby by means of specially designed projecting masonry boxes. These boxes have shuttered doors that can be closed in cold or windy weather. The width of the rooms was determined by the roofing wood available, and the women's quarters were provided with very small openings that admit some light but do not allow outsiders to see inside. In line with cultural values, no balconies or mashrabiyas were allowed, at least in Sana'a. The sanitary installations, although elementary, were adequate under the prevailing climatic and other conditions.

It is natural that people who have been exposed to modern ways of living would find some faults with the traditional house — the sanitary arrangements, the narrow and high steps of the staircase, insufficient light in the women's and children's quarters, and the low doors everywhere. But are these really serious drawbacks that cannot be overcome? Is it possible to retain the best features of the traditional Arab city and the traditional Arab house and incorporate into them the latest features of modern living? Will the younger generation continue to move out of the old city to occupy the so-called

Typical housing in old Sana'a.

Photo: C. Little/Aga Khan Awards.
modern villas that have been built and still continue to be built in the new parts of Sana’a? Will the traditional crafts of the old city be allowed to stagnate and then die through neglect? Will the fate of other traditional Arab cities in other countries befall the beautiful cities of Yemen, so that they become reservoirs of poor migrants from the countryside, degenerate into slums, and slowly waste away?

Whether we like it or not, there are two realities in Sana’a today. On the one hand, there is the old city representing the Islamic physical model with its well-defined component parts of a centre (composed of the Grand Mosque and the market); its interesting axes representing the main thoroughfares that connect the city centre with the periphery and also with the surrounding hinterland through the city gates; and its hierarchy of streets, roads, and cul-de-sacs that branch off from the main axes and connect the residential sectors with one another and with the rest of the city fabric. The whole city is an organic, cellular organization reflecting the religious, cultural and organizational values of Islamic society. On the other hand, there is the uncontrolled and almost haphazard increase in low-density development that has been taking place for some time and reached boom proportions in the 1970s. New material, such as the concrete block, reinforced concrete, metal doors and windows, have appeared for the first time, and a new breed of contractors have come on the scene. Nevertheless, the traditional method of building walls with stone still persists, as does the tradition of decoration with gypsum and stained glass. This is an encouraging feature and an indication that strong building traditions exist that need to be preserved and further developed.

The traditional method of construction as practised in Yemen is not always perfect.

The earthquake of 13 December 1982, which devastated large areas of the Dhahran region, has demonstrated the weaknesses inherent in the siting, design, and construction of traditional buildings. Experts from ECWA, the World Bank, the Kuwait Fund, the Arab Fund and OPEC have recommended remedial measures that would improve the performance of buildings under seismic conditions. In this connection, action in two areas is imperative. The first involves training all professional and technical cadres in general and re-educating traditional artisans in particular on the correct methods of construction. The second area of action involves the production of local building materials with correct sizes that would lend themselves to earthquake-resistant construction. A step in this direction would be to integrate the mechanical stone quarrying, cutting and aggregation operations in order to increase the supply
of these materials and to eliminate the high percentage of waste that results from the current primitive and mostly manual stone cutting practice.

The concern with research into and the production of local building materials, together with the training of manpower for its proper use, is significant also for energy conservation purposes in an energy-importing country like Yemen. Studies undertaken by ECWA show that in the oil-producing countries of the region, the human settlement sector has the highest share of energy consumption. In the name of modernity and under the influence of an alien life-style and culture, houses, schools, hospitals and other buildings are constructed of imported materials such as concrete and glass, which become unusable without mechanical air conditioning, day and night. Yet in some of these same countries there exist buildings constructed with traditional local materials that are extremely energy-efficient and comfortable to live in without artificial conditioning.

The resurrection of proper urban development is contingent upon the ability to respond to local physical conditions and at the same time to meet the socio-economic, cultural and moral requirements of the Arab countries. Much has been written about recent developments in the Arab world, about the intellectual patronage and the wicked designs of foreigners who are bent on destroying the Arab cultural heritage, and about the unsuitability of importing models of planning and architecture into Arab countries. Unfortunately, no serious action has been taken to design and construct a contemporary Arab city based on Arab city planning and architectural principles that would meet all the requirements of the present and the foreseeable future. Although many Arab architects and planners have been advocating such ideas, their views have not been taken into consideration by policy and decision makers. UNESCO has done, and is still doing, splendid work in studying, documenting and preserving some Arab and Islamic cities, and it is up to us to find the best practical ways of supporting such efforts that are aimed at preserving the Islamic heritage and character of Sana'a and the other Yemeni cities while at the same time adapting them to serve modern living needs.
Conservation and Development

Michael Welbank

Introduction

One of the most intractable conservation problems of today is the conservation of cohesive high-quality urban areas, or indeed whole cities. This is particularly so in the Middle East and the Muslim world. There is no shortage of debate and earnest words about what should be conserved, the cultural significance of these elements of world heritage, the physical works that should be undertaken to conserve them, and the pressing need for action. But the gap between words and action is alarming, and the gap appears to be growing.

After perusing many papers and documents on this subject, it is all too easy to feel encouraged by the strength of interest and by the clarity of ideals and principles. But this feeling quickly turns to depression when the towns, cities and urban quarters discussed are actually visited and examined. So great is the discrepancy between the ideal and the actual that some scrutiny or review of current conservation approaches to the problem of urban areas seems to be urgently required.

Conservation is not like politics. Politics is the art of the possible, and most political systems do not adhere rigidly to any one fixed set of values. As society changes, so the political systems change to embrace more completely the values of the societies they serve. Time is not a limiting factor in this interplay. The interplay is continuous and unending, with an unceasing effort to find a system to express the values of each generation. Although political systems may well be informed by basic principles, in operation they are essentially pragmatic in seeking out solutions acceptable to nations and societies.

Can the conservation problems of urban areas be approached in this manner? If we are content to press and to go on arguing for the most perfect and idealised conservation principles until they are finally acceptable for action, the objects of conservation may well have seriously deteriorated and even disappeared altogether. The problem today, then, is to find a way to formulate conservation policies and approaches that can be accepted and acted on immediately. Judging by results so far around the world, such policies do not abound in any great number.

What distinguishes the conservation of urban areas from the conservation of monuments or other artifacts is that the former are inhabited and used by people and the latter are not. “Conservation” is an overworked word that means all things to all people. At one end of the scale, the term “conservation” is used to describe the work of chemists and physicists who have detailed technical knowledge of the material of artifacts and are concerned with maintaining their long-term existence. “Conservation” is also used to describe the work of those hardy teams out in the field — architects, archaeologists and scientists — who attempt to stem the ravages of time and weather on monuments and buildings. And, lastly, “conservation” describes the work of those concerned with maintaining the fabric of a city in its original form and it encompasses all the skills mentioned above.

With urban planners, cultural planners, urban managers, and administrators also on the scene, the tasks of conservation become diffuse and complex. Problems stem from the fact that the physical fabric of a city, town or urban quarter is a place where people are living, working and going about their everyday business. It is a scene with people, and this factor gives rise to a number of essential points about the conservation of urban quarters:

- They cannot be viewed as physical objects alone.
- They cannot be handed over to be conserved without the willingness and wish of the society in the area.
- They are given a great deal of their character by the very fact that they are peopled.
- The intertwixture of activity and setting is integral to their character.
- Because they are peopled, they cannot be
expected to remain in a static condition. In this type of situation, conservation cannot stand back from society and its development. Conservationists must face the problems of making conservation acceptable and possible to the society within and to the nation as a whole. Without this sort of realism, can conservationists expect to make progress in the field of city or urban quarter conservation?

Urban Area Conservation Problems

Because the conservation of urban quarters presents a number of unique problems, technical conservation approaches are not likely to succeed on their own. The question has to be viewed in the context of the cultural, economic, and political values of the society in which it is located. It is possible to set down some aspects of this context for consideration and discussion:

1) Lack of Awareness. There is often little awareness by the people who live in such urban quarters of the regard with which the fabric is held by others. For the inhabitants, it is a place to live and work in and not to be conserved or venerated. They may even positively dislike it because it is old and perhaps lacks modern facilities, and they may look with envy and hope at more modern constructions nearby. It is a common occurrence that such parts of towns were built by homogenous groups bound together by common interests and values — whether these be religious, connected with work or trade, standards of living, wealth, community or kinship, or cultural. It is often the case that the original group that created the quarter and lived in it and cared for it no longer exists, and the area has become inhabited by a group with very different standards and values.

Often there is little regard for the area by the later group of occupants. It is just an urban location providing places for living and working at a price they can afford, but they have no special attachment to the area and would leave if they could. Often they are trapped by circumstances. While they may derive some sense of pride from a vague recognition that the quarter represents some continuity with the past traditions of their society and is a part of their history, this feeling usually is not strong enough to prevent people from leaving if they can.

2) Lack of Focus or Status. There is usually neither focus nor status for conservation in the orthodox arrangements of local government. Conservation, above all, requires a strong, clear locus to provide an adequate base from which to coordinate the multifarious activities related to it. This is important enough with monuments or simple individual structures, but with populated zones it becomes imperative. The locus must be integral with the authorities responsible for all the other functions for the community and also directly related to the local political power base. Conservation cannot stand apart and control the whole area. Too often that has been tried, and it has failed. The requirements of conservation must be accepted without question by the community.

3) Alien and Elite Sources. The banner of conservation is usually raised by those who do not live in the country at all. Conservation concepts are therefore often external to the area, and are often brought to it by national and international cultural do-gooders.

By and large, in Europe and America conservation is now an accepted part of national life. There will always be endless arguments about the total resources devoted to the cause, about the way such resources should be deployed, about the appropriateness of this or that conservation technique, and about conservation issues generally; but there is no danger of the conservation movement losing support or disappearing. In fact, many would argue that the conservation movement is so strong in these continents as to make change and redevelopment complex, expensive, and sometimes even impossible. It is not easy for those from this conservation arena to enter into a locale where conservation is new and unknown. Such moves are often resented by local people as attempts to impose foreign and alien concepts — offshoots of neocolonialism. Even within any particular country, the conservation movement starts among an educated elite, often academics, who have little affinity with those living in the urban quarters in question.

4) Lack of Funds. At a national level, few underdeveloped countries can afford any allocation of national funds to conservation. Conservation is not among the top priorities of countries that are struggling to feed, educate, provide health care and create jobs for their population. Rightly, these are national priorities, and it is hard for conservation to make its voice heard in those countries which in fact contain many of the greatest elements of the world's heritage and have the most limited resources with which to shoulder that burden.

There is no easy and obvious route open to bring conservation concepts to underdeveloped countries to the level where they will have popular support. Conservation in this situation often appears to be a reified nonsense produced by an educated elite with foreigners aiding and abetting this conspiracy.

Two examples from this region of the world, Cairo and Sana'a, illustrate the nature of particular problems associated with urban conservation. Both of these are included in the lists of the World Heritage Convention.

The fabric of the old city of Cairo has suffered immense deterioration in this century, and the pace of deterioration is accelerating. The old city itself covers an area some 1 km × 4 km, has a population of about 320,000 people, and contains some 450 monuments and buildings registered by the Antiquities Organisation. Formal measures for the protection and conservation of this heritage have been in existence since the last years of the nineteenth century. Today such formal
measures still exist, and there are regulations that allow for the detailed architectural control of all new structures in the old city in order to ensure that such buildings are in harmony with the existing fabric. Thus there is no lack of conservation measures and, further, no lack of interest in the city by groups dedicated to conservation. But it is just not happening. The UNESCO report of 1980 on the “Conservation of the City of Old Cairo” recognised the imbalance between the scale of the problem and the available resources, such as money, technical staff, and authority. It therefore proposed an approach based on concentration of effort in six priority areas; if conserved, these areas would provide a permanent presentation of the character of the old city and would ensure the conservation of a wide range of key buildings. Some thirty major national monuments were excluded from the priority list on the basis that there was support for them in any event and such support would continue. In this way it was hoped that the problem would be reduced to realistic and manageable proportions, could be funded, and would not interfere, by nature of its relatively small scale, with the normal development process that was undoubtedly going to continue in the city, despite available regulating powers.

It must be reported that as yet little progress can be perceived, even along this path, and the reasons appear to be the following:

- The concept of priority areas has been a difficult one for the Antiquities Organisation to accept, as they have a formal duty for the conservation of all monuments.
- No co-ordination of action between those charged with the duty of conservation and the normal local authority has been achieved.
- There is inadequate funding available.
- There is a scarcity of technical and professional resources.

Thus the process of deterioration continues. Conservation in the old city of Cairo has not managed to come to terms with development, and development in the form of social support, funds, political will, and authority is winning. The measures proposed in the UNESCO report, which were formally endorsed by the government, may not have been perfect but were intended to reduce the problem to a manageable size and to provide a means whereby conservation interest and development interest could meet and jointly act as partners. Alas, they have remained apart.

Sana’a is not only on the list of the World Heritage Convention but is also the subject of a UNESCO international campaign. Through these means it is hoped that the city will obtain adequate support, financial and otherwise, in tackling its conservation problems. Compared to old Cairo, Sana’a has come to the problems of conservation more lately, but there are considerable similarities. The nature of the problem at Sana’a has two major components, namely, the overall planning of the city and the conservation of the fabric of the old city.

The urban growth of Sana’a since the early 1970s has been a remarkable phenomenon. For a time it appeared that the explosion of urban growth outside the old walls would lead to a new greater Sana’a in which the old town could have become the focus for such a concentration of central area activities that the pressures for wholesale redevelopment of the old city would grow and become irresistible. It now seems, however, that the overall strategic plan adopted for Sana’a has averted this danger, although its adoption was accompanied by considerable problems and difficulties. The main central core of the city is displaced to one side of the old city, giving it adequate free space in which to enlarge and grow and relating to the new and future residential areas in a way that places the old city off centre. The old city thus has the chance to remain an integral part of the new greater Sana’a, close to the centre of activity but not subject to externally created development pressures. This is a very considerable achievement, and the position should be closely monitored on a regular basis to ensure that the situation is not eroded over the years.

The second aspect is the future of the urban fabric within the walls. What are the options? At one end of the scale, the whole of the old city could be taken over for static conservation as a major external museum piece. The population could either be moved out or retained, with the fabric kept exactly as it is and all repairs, maintenance, and changes determined by the conservationists—a totally unrealistic proposition. At the other end of the scale, the future of the old city could be left to the normal process of change and development in accordance with the demands and requirements of the community within the city and the public authorities acting on their behalf. This policy is realistic in the sense that it could be acted upon easily enough, but the result would be gradual disappearance of the old city. In part, this process can be observed already and, once started, it proceeds at a fairly rapid rate.

The appropriate solution is to find a middle course where the interests of conservation and development can be combined, but this implies a “give and take” policy. There will need to be restrictions on development, while at the same time conservation must not hinder the provision of services and facilities to the population. It is essential to ensure that the city remains peopled, and to do so the expectations of the inhabitants regarding services, convenience and comfort must to a large measure be met. If not, the city will
become depopulated, or, rather, it will become populated by a new wave of immigrants who have little attachment to the city or to its traditions.

It would seem, then, that the main task is to get social and political support for a detailed plan for the old city that encompasses conservation concepts and reasonable development. Again conservation and development must come to terms if there is to be any success in urban area conservation. But conservation and development tend to be rather unequal partners in any joint operations. Conservation and development relate to different sectors of national governments, different decision-makers and authorities, different groups in societies, and different beneficiaries.

The pressure for the economic, physical, and social development of communities throughout the world today is an irresistible force — and nowhere more so than in the Third World. The thrust and power of this movement springs from reaction to poverty, disease, undernourishment, injustice, domination, and underprivilege. This movement's power is great; it has high motivation; it has political force; it has received worldwide backing and funds from international agencies. It can be a disruptive and disturbing force, despite its positive aspects, and some of the most disruptive and disturbing manifestations of current development activity can be observed in the towns and cities of the developing countries. It is here that the conflicts between ruthless insensitive change and conservation are most acute. Conservation, in conflict with the forces of development, has more often than not succumbed.

**Development Versus Conservation**

Development and conservation appear to be pursuing quite separate paths in the Third World. In contrast to development interests, conservation has not established as powerful a set of institutions, any significant power base, or any real political

*Rawdah Mosque, Yemen Arab Republic.*
*Photo: C. Little/Aga Khan Awards.*
Conservation and Development

Amran, Yemen Arab Republic. A thin, protective layer of cement plaster has been applied to the parapets and roof terraces of some buildings.

Photo: C. Little/Aga Khan Awards.

Power or track record of achievement. Many will say that conservation has no need of, nor is it appropriate for it to acquire, the paraphernalia of authority. There are other paths open, such as:

- the impact of cultural development and education in an underdeveloped country leading to changed attitudes to conservation by a wide spectrum of society;
- the leadership and elitist pressure executed by an educated minority to undertake conservation, which will in time have general effect;
- the efforts of the world community to conserve the world's cultural heritage, which will prevail in the end with success.

The first of the above paths is undoubtedly the strongest and most enduring. However, the problem in so many conservation cases is so pressing and immediate that the time-lag for the concept of conservation to be lodged into the national consciousness is unacceptably long; by the time such consciousness is awakened, the reasons for it may well have disappeared from the face of the earth. The other paths are probably only precursors for the first path and on their own are unlikely to have a major impact. Of course there are success stories, but these are usually only successful skirmishes in an ultimate defeat.

At a national level, few underdeveloped countries can afford any allocation of national funds to conservation. Conservation is not among the top priorities of countries that are struggling to feed, educate, provide health care, and create jobs for their people. Rightly, these are the national priorities, and it is hard for conservation to make its voice heard, for example, in any country that is a member of the International Development Association (IDA). The IDA is an affiliate of the World Bank for low-income countries, and provides loans for development projects in these countries at highly preferential rates compared to the normal terms of World Bank loans. Among the thirty-six low-income countries having an average per capita GNP of approximately 250 U.S. dollars per annum are Ethiopia, Nepal, India, Pakistan, Bangladesh and Indonesia. These are the poorest countries of the world, and yet great monuments of the world's cultural heritage are located in some of these countries. Among the middle income countries having up to a per capita GNP figure of 600 U.S. dollars per annum are Yemen, Ghana and Egypt. As compared to these figures, the developed industrial countries of Europe and America have an average per capita GNP of approximately 10,000 U.S. dollars per annum.

Even in developed countries there is disagreement about the extent of resources to be allocated for conservation. It is thus hardly surprising that countries with average per capita GNPs of under one-tenth that of the industrial nations should find conservation a difficult thing to grapple with and find it difficult to allocate their scarce resources to such programmes. They must first struggle with their basic developmental problems. No matter how much the world exhorts these countries to conserve elements of their cultural heritage, it will not happen unless the world provides the means — in either technical or financial terms.

The basic problems of these countries are easily forgotten by those who sit in the lush hotels of the capitals. Reminders of the scale of the gap between the industrialised "north" and the underdeveloped "south" are continually necessary. To take the examples of the Yemen Arab Republic and two of its neighbours and to compare their condition with that of Europe and the United States is instructive and salutary. The "Development Indicators" table graphically illustrates the gap.

It appears that a fairly high level of economic development has to be achieved before other non-economic objectives, such as conservation, can be fully embraced. The parallel can be drawn to population growth. The reduction of population growth rates is one of the key
problems in achieving effective long-term beneficial development. For many underdeveloped countries, every advance seems to be negated by growth in population numbers.

One general response to this problem had been to institute family planning programmes, but, after decades of failure in making any impact on population growth, it has come to be accepted that successful family planning programmes follow successful economic development and can never precede it. In Europe family sizes started a dramatic plunge in the nineteenth century, decades ahead of the widespread availability of acceptable birth control measures. The correlation of economic progress with a decline in family size is irrefutable. It is economic well-being, physical health, and security that allow families the confidence to rely on fewer children for future survival. So the path of “development”, while uneven and difficult to follow, does allow societies to reach a plateau with horizons other than survival.

This is intended to be not a counsel of despair but an analysis of reality. Stress conservation movements will not exist in underdeveloped countries unless they can be demonstrated to have an economic benefit, such as through the creation or maintenance of a tourist attraction. The latter, in turn, produces a separate set of problems. Furthermore, the international institutions most concerned with worldwide conservation, such as UNESCO, the World Heritage Convention and the International Council on Monuments and Sites (ICOMOS), provide exhortation, guidance and stimulation but do not enter the field of action.

By comparison, the international institutions for development are legion, and they have funds — not enough perhaps, but funds nevertheless. These institutions — the World Bank, the International Development Associations, Africa Development Bank, Asian Development Bank, Saudi Fund, and Kuwait Fund, to name only a few — all have one purpose in common: the deployment of funds for

Wall detail of a house in Thula. The round windows are sheathed with alabaster.

Photo: C. Little/Aga Khan Awards.
investment in development. Some may argue that they represent the machinations of the industrialized nations to weigh down the Third World with debts, particularly during the current world-wide economic recession. But despite the current difficulties, international investment in the Third World continues and there are pressures to increase it. The limits have not been reached.

This is the view of A. W. Clausen, president of the World Bank, expressed as recently as February 1983 in his lecture “Third World Debt and Global Recovery”. Clausen stated that there were a number of reasons to have confidence that the Third World debt problems were by no means insoluble and that investment should not be diminished because of the current world economic situation. He stressed three points:

“First, the expansion of international lending is normal, healthy and most necessary.... The historical experience of international investment, its expansion as part of the global economic dynamism of the last two decades, and its concentration among the middle-income countries all confirm that expanding capital flows are a normal and essential aspect of global economic vitality.

“My second point is that the success of the developing countries, especially the middle-income countries, in coping with the stresses of the 1970s is strong evidence that their present payment problems are liquidity, not solvency problems.

“Liquidity refers to the capacity to meet obligations in the short term. If the price of a staple export falls, or the price of a major import rises, a country may have trouble meeting its obligation on time. The country can, in due course, expand other exports or cut back on imports, but such adjustment takes time. Liquidity problems can arise even for countries with no underlying solvency problems.

“Solvency refers to the capacity to carry a certain level of debt over the long term. A country's ability to pay back debts depends on growth in its national income and long-run ability to export, so a growing economy can safely carry a growing debt.

“A third reason for thinking that Third World debt problems are manageable is the strength of the present international financial system.

“The special risks of sovereign lending are that it is not covered by bankruptcy laws, and that creditors cannot repossess the assets of a sovereign nation. On the other hand, nations cannot disappear, as companies can, by legal fiat. Nations continue to exist, and they need credit to finance trade and buffer current-account fluctuations as long as they are part of the global economy. Thus, although many countries are now unable to make payments on time, not one has repudiated its debt.”

It is of great interest that the president of the World Bank believes that continuing investment in the Third World for its development is a proper course of action for the world and will probably release more funds into the Third World than any amount of gifts, grants and technical assistance.

If this is the way that the development movement of the world has progressed, why should it not also be the way for conservation to progress in the Third World? The orthodox answer is that conservation is not directly an economic generator, that conservation does not produce revenue with which to repay the debt, and that conservation does not deliver assistance to the poor in facing their predicament of coping with the problems of life on a day-to-day basis. This may be true, but it would appear to neglect a number of important factors:

1) The assessment of development entirely in economic terms is wrong: values other than those that can be expressed in quantitative economic terms are as worthy as any other.

2) National or cultural pride is a force that can provide motivation in societies — a motivation which, while it may not directly lead the general population to appreciate the heritage of the artifacts of their culture, nonetheless provides them with a sense of contentment and satisfaction from belonging to a society in which these exist and are respected.

3) Development is an ongoing process, and it would be a strange society that did not aspire to a future situation in which it would be able to conserve its heritage, even though immediate pressures may make this impossible. The problem can therefore be recognized and accepted as a short-to-medium term problem and not a long-term one. Help is required in the short term.

Then why is it that investment cannot be found for this purpose? If the conservation movement could manage to find a funding source, then it would really have established a power base for the future.

It is significant to note that in the industrialized nations with established and long-accepted conservation movements investment funds for conservation come primarily from the public purse one way or another. And yet these same nations talk of the necessity of conservation to countries with impoverished exchequers and with major problems in providing their people with the basic necessities of life. No longer are exhortation and advice enough. The developed world, if it believes in conservation, must share some of its investment funds for conservation with the world in the same way as there is a commitment to devote a given percentage of its GNP to the international agencies for development. There is no fundamental reason why this cannot be done, given the will.

**Conservation Investment and Implementation**

What may be needed is an “International Bank for Conservation,” operating in a similar manner to the World Bank. Above all, if it were created, there would be need for an equivalent of the IDA — an “International Conservation Association” — to deliver loans on preferential terms to underdeveloped countries. Would it work?
How could it possibly work? The answers are of course not known. If it had any support, the concept would need to be studied further and worked out. Sources of support would need to be found and eventually launched and operated. It could fail at any of these stages, but it would then be for genuine practical difficulties rather than generalized negative arguments.

The World Bank (formerly named the International Bank for Reconstruction and Development) was established following World War II as one of the Bretton Woods group of international financial institutions. Its membership and its members are both contributors of its capital and borrowers. Finance is obtained by mandatory contributions from the member countries, from voluntary contributions by member countries, and from loans raised in the open market. Interest on all these sources of funds is paid as is normal in the banking system.

It is guaranteed internationally, but its solvency basically depends on the prudence of its lending — like many banks, these have been on the whole “conservative” — and on the stability of the international banking system as a whole.

The costs of the World Bank of obtaining its funds average at the moment approximately 10.5 percent, varying from contributions of member countries at about 4.5 percent to short-term commercial borrowing at 16 percent. Loans from the World Bank are made on projects within fields specifically set down in its charter: those that have productive purposes and those that stimulate economic growth. The loans are for twenty years with five years of grace before commencement of repayment, and the average interest charge on these at the moment is about 12.5 percent.

For the poorer countries of the world — those with a per capita GNP of under 500 U.S. dollars per annum — membership in the International Development Associations is available. Funds for the IDA are provided by further specific grants of funds by member countries of the World Bank. Credits from the IDA are for fifty years with ten years of grace before repayment commences. There is no interest charge, but they carry a small service charge that, in effect, results in long-term loans at interest rates of about one percent.

Why should conservation not have the same benefit of financial institutions established by charter and guaranteed by its founding members? It is a strange paradox that there is plenty of money in the world market looking for projects for investment. As long as good guarantees are forthcoming, then the flow of funds seems assured. The stability and the worth of the guarantee of the institutions, linked to the guarantees of the sovereign states who are the final borrowers, is of course what makes it possible. The president of the World Bank maintains that prudent sovereign lending is still a valid course today, even at the current levels of the external debts of many countries. Such institutions would have to proceed slowly from modest beginnings in the same way as the World Bank did from 1954 onwards. As a start, it might be possible to ask the 120 members of the World Bank to agree to finance an operation to the level of 0.5 percent of their Bank subscription capital. This would give an initial base of something in the vicinity of 150 million U.S. dollars. If commercial borrowing could be obtained on top of this initial capital at a proper ratio, then there could be a real basis for establishing such an institution and for operating it. There will be many who will say that this is quite a ridiculous level of activity related to the needs. It is, but it could be the start of a long-term programme of continuing and growing investment in conservation.

When funds are supplied, then there is quite a different ethos between investments and gifts. The supply of investment differs from the supply of technical advice and general encouragement.
Investment involves a sense of responsibility created on both sides and the realisation that however soft it may appear to be, the loan has to be repaid. The banker has a responsibility to ensure that the investment is sound and within the parameters set by the Bank charter, that there is a capability to repay and, if at all possible, that repayments may be secured on a “cost recovery” basis linked to each project. The government has to be clear that it really wants to obtain funds for the purpose, that it has clear policies and programme for the use of such funds, and that it is ready to pledge itself to repay. By this means a “dialogue” is established. The World Bank puts the greatest emphasis on the creation of “dialogue”. It is a delicate and potentially controversial field. Any bank as the lender has a duty to ensure that the use of loans is sound in all ways. It does not have to lend to a borrower who does not accept the loan conditions. However, when the borrower is a country, these loan conditions sometimes may appear to be an attempt to interfere in the affairs of a sovereign state. The World Bank will always refute this, and it is open both to the bank and to the borrower not to proceed if either side does not accept the loan conditions. This process produces a dynamic tension and a vigour not apparent with gifts or grants.

A contrast can be made with the nearest parallel, the international campaigns of UNESCO. Within the limitation of action and of the resources of UNESCO, it is difficult to see any other format that they might have taken. Their initiative and efforts over the years has been exemplary. But no one, least of all the UNESCO officials involved, would claim that they have had a dramatic impact commensurate with the administrative effort and the funds received (apart from the Nubia campaign, a unique and amazing achievement that seemed to spoil the market for the subsequent 28 campaigns). Responses are sporadic and various, according to general knowledge or notoriety of the subject rather than need. Fifteen years after the start of the International Campaign for Moenjodaro and seven years...
Conclusion

The main thrust of this paper is that the conservation movement in the world should come to terms with reality much more than it does at present and that its advances in the Third World, where much of the world’s cultural heritage lies, have been lamentably slow. Indeed, so slow as to be alarming in the face of the remorseless pressures of deterioration, decay and destruction that are exerted on so many of the elements comprising this heritage.

In the Third World, development will understandably be the national priority, and the development process is backed up by a wide range of international institutions, many of which are the source of funds. Conservation at this point appears to be the poor relation. Despite the importance of appropriate conservation, both for particular nations and also for the world in general, conservation lacks authority and resources in the clash of "development" versus "conservation".

There is a need to examine rigorously how conservation of the world’s cultural heritage can obtain the backing of funds appropriate to the scale of the problem. The models created by the "development" movement in the world are the obvious ones to examine to see if they can be reproduced in a way to benefit conservation. It is proposed to attempt to form an International Bank for Conservation with procedures based on the World Bank, together with an International Conservation Association, as a means for Third World countries to obtain loans on preferential terms for conservation projects. There is a considerable body of technical knowledge involved with conservation, and for technical services, such institutions could engage the services of The International Centre for The Study of the Preservation and The Restoration of Cultural Property (ICROM) and other international technical bodies. For the moment, further debate and discussion on this and other ideas are required in order to design a practical means of dramatically augmenting the funds for conservation on a world-wide basis.

Even with the availability of funds, there will still be problems. One key problem on which much more study and work is needed relates to the conservation of populated urban areas, where the interests of conservation are so often in conflict. The balance created, both interests having funds or sharing the same objectives would be of great benefit. But even then there will still be a need for a system of implementation that integrates the programmes of action emanating from these two movements. To allow such integration to be effected, there will need to be clearer and accepted guidelines devised from both the enunciation of basic principles and also from the experience of applying the principles of how to direct and manage in urban areas to allow the standards of living of the population to improve and yet be handled in a way compatible with conservation.

It has proved to date an intractable problem; and if only "conservation" could appear as an equal partner with "development", then progress might well be faster and more direct. To be an equal partner needs the strength that having funds can bring. It is hoped that advances can be made as quickly as possible in this sphere for the lasting benefit of the world’s cultural heritage.
The following discussion is based on observations made during forty years of practice in the Arab environment, particularly in Iraq and the Gulf region. These observations have led me to conclude that it is essential to preserve the Arab-Islamic heritage, to obtain conditions favourable to the future development of the area, to achieve the highest possible standards in the forthcoming stage of its contemporaneity, and to create a built environment suitable to the way in which its civilisation will take shape.

It is not intended to argue on an abstract plane the defence of the distinctive identity of a region. Rather, it is the issue of tradition versus modernity that will be discussed in terms of architectural practice, and the focus will be on the role of the heritage. Through the visual materials, it is also hoped to bring into sharper focus the practical aspects of architecture and planning in the Arab environment.

Before turning to the question of what heritage means and why it is essential for a healthy development of the future environment, two further questions must be posed: 1) What is contemporaneity? 2) How can it relate to the Arab-Islamic heritage without dispensing it. Contemporaneity refers to all aspects of modern architectural practice and new approaches to planning in the international arena. The evolution of a new built environment, directed by today's design and planning approaches yet not devoid of an awareness of the tradition, can be summed up with the expression, urbanism. Urbanism is not only connected with contemporaneity, but is informed by the presence of the heritage. The latter term is hard to define, for it admits of abstract civilisational and spiritual values as well as functional considerations; it is shaped according to human criteria; and is an appurtenance of the entire civilisation. But functional needs of collectivities — be they towns, cities, regions or entire civilisations — change over time. By virtue of being informed both by intrinsic values and by functional needs, urbanism can now anticipate a new stage of contemporaneity, and will be able

Elements of the Islamic built environment — dome, minaret and arches — as depicted on a page of the Magamat al-Hariri by al-Wasity.

Photo: M. Makiya.
to create in the next stage an appropriate environment for the future form of the Arab-Islamic civilisation.

Modernism alone, without taking into account regional and cultural distinctions, cannot make for successful practice. The philosophy underlying modern architecture is distinctly Western and derived from Greek and Roman sources. While Western art and architecture, in all of their forms, have evolved in a direction quite different from Islamic art and architecture, an approach to architectural practice consisting only of introducing Western forms into the Islamic environment cannot be considered suitable or desirable.

This, however, is precisely what has happened, in far too many instances. Modernism has become a major influence on designers working in the Arab-Islamic environment; but, judging from the way in which it has been practised, it would appear that it has neither been properly taught or understood nor practised as it ought to have been. New design implementations reflect chiefly the technological advances that have made them possible; but the technological processes, conceived and developed in an alien environment, fail to make a proper impact on the civilisational and physical development in the
Arab-Islamic environment.
The same can be said about urban planning. Its unfortunate consequences stemmed from implementations that largely ignored the heritage. Most of those who were involved in the planning activities of the region were engineers and people with technical expertise. The narrow vision of the specialist took precedence over and excluded cultural, historical and regional considerations. Owing to the limitations of planning theories and to a lack of well-articulated principles of planning, specialized agencies and international bodies have not been able to bridge the gap between purely economic considerations on the one hand, and aesthetic and cultural considerations on the other. For example, one unfortunate consequence of modern urban planning in the region was that no balance was achieved between the requirements of mechanical transport and the people’s right to open space.

In this respect modernism stands in opposition to inheritedness. Whereas the former is informed only by scientific and technological concerns, the latter includes both the aesthetic and functional, two inseparable attributes of urbanism in Islamic thought.

But contemporaneity as a concept is not devoid of positive aspects. Despite the fact that its origins lie in Western thought and practice, it has been gradually extended to incorporate theories and approaches from other environments. Although the Arab-Islamic environment has so far been of marginal influence on modernism or contemporaneity, the latter, in the extended and receptive form, can be of use to the practitioners in the Islamic world by fostering a feeling for architectural and technological elaborateness, for a more refined visual appearance, for functional use of new materials, and for greater proficiency in practice. With its tenets thus modified, contemporaneity ceased to be divorced from the valuable elements of heritage; it evolved and came to its own through practice and experimentation.

Still, by the time it had grown capable of offering fresh formal attractiveness, the costs had been staggering and results disappointing. In retrospect, it could be said that heretofore practitioners have relied solely on experiments to produce shapes and designs rather than taking into consideration the relationship between the built environment and civilisation.

Now that the high costs of experimentation have been paid for, contemporaneity is on the threshold of a new stage of historical development. It has been confirmed that the heritage has been preserved within the new set of values introduced by contemporaneity in the environment as a whole, but not where the distinctive character of individual structures is concerned. Experiments carried out in the Arab environment by international consultants have helped the latter to gain a broader vision and abandon their narrow focus.

One of the major tasks in the new stage will be to stress the importance of stylistic refinement in architecture. A few experiments already underway have begun offering specific elements of stylistic refinement. This is a result of the fact that not only the international consultants have been influenced by the heritage of the areas in which they practised, but they themselves have been able to influence the emerging set of values in the region.

Heritage and contemporaneity, therefore, no longer remain as opposites.

To reinforce the point made earlier, heritage as an entity and a concept is both normative and functional in respect of human life. It is, in a sense, a “remoteness in time”; but, as “the fourth dimension,” as it has often been called, it influences artistic production both functionally and aesthetically. This, in fact, constitutes a parallel to the Islamic view of human existence. Islamic thought, after all, is not unique among doctrines merely because it considers the spiritual and the material aspects of existence as being inseparable.

Architectural criteria are ultimately derived from practice. But the architect needs to be aware of the civilisation and
the heritage of the area in which he practises in order to be able to understand what lies behind externalities and formal appearances. He also should not neglect human needs, for he has to make his creative endeavour meaningful in the face of changing circumstances.

Rationalism alone cannot fulfill all the requirements of aesthetics; and aesthetics, in turn, are not merely an "additional element," or a "third dimension," but are closely connected with function. It is the heritage that shows us best the interconnections between the form and the functions. In this respect, heritage is not restricted to its historical features or to movements whether they have survived or not; but it is a source in which to discover the harmony of aesthetic and functional values.

The setting in which an architect practises is a human society that combines the past, present and the future. It is, moreover, a specific geographical location whose characteristics are determined by nature. The geographical setting also helps shape the values of a civilisation, which thus acquires distinctive features that become a part of the heritage.

If geographical features are disregarded, and modernism has been losing sight of specific local features, then that is tantamount to denying the heritage and civilisation. The result has been designs that are totally out of place yet emerge as much-discussed and influential models because they are published by the international architectural press. For the sake of profitability, architects are forced to reduce time and effort spent in practice. The application of set models leaves little room for the expression of individual talent, partly because of exclusive emphasis placed on details at the expense of the structure as a whole. Yet only with practice can one experience the difficulty of implementing a set of models. The course of architecture cannot be determined by theoretical speculation or by perpetuating models through critical discussion of the models published. Art criticism usually begins with conclusions drawn from earlier ideas and criteria and proceeds to coin expressions and generate terminology that are transmitted to newcomers not without creating a certain amount of confusion.

Before turning to specific problems requiring planning and design solutions, two points should be stressed:

1) Authenticity and renewal can accommodate a form of preservation capable of coping with change within the limits imposed by human needs.

2) Contemporaneity and studies related to it should be taken as an important experimental phase in the evolution of a new stage in urbanism and its effects on people.
Serageldin

I have three comments to make about the subjects discussed by our distinguished colleagues Dr. al-Attar and Mr. Welbank. First, I would like to emphasize that a central part of the problem which we confront in our Muslim culture today is that the ruling elites of our societies have gone through a process of disassociation from their cultural roots. This had led to the dichotomisation of cultural perception, where the historic heritage — cultural, religious, spiritual — is identified with the past backwardness and poverty, while the future, the image of “progress” in the future, is borrowed from elsewhere, namely the West. The problem created by this externally borrowed “image of progress” is very severe. It poses a challenge for designers, sociologists and philosophers who have to articulate, for the Muslim societies of today, a vision of the future which is culturally authentic and yet incorporates all the progressive elements that societies in transition rightly aspire to. Unless and until we succeed in providing the ruling elites of Muslim societies with an alternative image of progress, they will continue to pay lip service to the need for cultural authenticity while their actions will speak more loudly than their words as they hurry to adopt the most superficial aspects of Western culture.

Second, I am concerned with the use of the word “conservation”. While one can conserve the occasional monument or artifact, it should be clear that what we are talking about in the context of cities and urban structure, is much more than a problem of entire areas. Hence the prime concern should be to conserve the authentic character of entire areas and to encourage the creative and adaptive re-use of old structures to fit new needs and to keep the city forever alive. If we do not succeed in formulating and implementing a policy of adaptive re-use, we will, at best, end with dead “museums” in the cities, and at worst, we will end with marginal or unsuccessful projects.

In the context of adaptive re-use, conservationists may be able to avoid the use of “guerilla tactics” against development planners, since there is room to incorporate productive revenue-earning activities in the re-use of old areas. Sensitively done, to be sure, but nevertheless done all the same.

This brings me to my third point, the question of project finance. Far from being a gimmick or a tactic as may have been hinted at by Dr. Ibrahim, I believe that appropriate cost-recovery is essential in project design today. If we are indeed to deal with conservation cum revitalization and adaptive-reuse types of projects, we must realize that this just cannot be done on the basis of external grants or internal generosity. To build on such foundations is to build on shifting sands. It is far more sensible to start out with a project design that enables a project to proceed apace with its own funding and ultimately results in self-liquidating investments that avoid a drain on the public treasury if they do not actually result in a contribution to its revenue base. This fiscal discipline is essential to ensure that realism and pragmatism replace romanticism in approaching these problems that are very close to our hearts. And with this discipline will come the promise of greater potential success.

Ibrahim

I must congratulate Mr. Welbank for his excellent paper. I really agree with almost everything he said, but in order to stimulate discussion, I must confine some disagreements. Allow me, then, to just restate the three things I understood from the paper by Mr. Welbank. His objective is to find a way to formulate conservation policies and approaches that can be accepted and acted on immediately; on that I think we are all in agreement.

The problems of conservation are appropriately acknowledged by Mr. Welbank,
Comments

and they stem from the fact that the physical fabric of cities, towns and urban quarters is a place where people are still living, working, and going about their everyday business. There is a competition that is part of the problem — a struggle between conservation and development over funds and even over physical space. The solution, suggested by Mr. Welbank, is to set up international institutions. While I sympathize with the solution, I find that he contradicts some of his earlier assertions that outside agencies could do no more than help in the process, but the big task of conservation must come from within. Yet, as a final solution, he proposes international organisations modelled after the World Bank.

Another area of disagreement is his conception of development and conservation as categorical opposites. Had he broadened his argument by using the term "growth", or "economic growth", in setting up conservation and development as opposites, that kind of argument may have helped. But he used the word "development", and the way a social scientist understands development is a bit different. The literature now, in the late 1970s and early 1980s, has come around to transcending the narrow definition of development, and some of the statements made this morning allude to this fact. I would come to the conception of development that makes conservation really an integral part of it, not an opposite. A congruent total process in which both conservation and growth are approached with equity, as Professor al-Attar mentioned this morning, makes the most sense, at least in the case of the Third World.

The other point of disagreement is the narrow focus on conservation as protecting the past heritage, man-made past heritage. I feel that this goal is part of conservation, but conservation should not be synonymous with "museumisation". I would explain the concept of conservation to really include preserving the underlying — conceptual and subliminal — motifs that would permeate the total culture, including everything created in the past, present, and future. Only then could conservation become a continuous process rather than an isolated fossilised activity.

I would therefore suggest a broader definition of "development" that would incorporate conservation. Development, as I understand it, is a total process, cumulative, comprehensive and balanced; it is a process that caters to both physical and spiritual needs, economic as well as socio-cultural considerations. And if we understand development as such, then conservation becomes really an integral part of it. This is not just a verbal solution to the problem; it is a concept that should be propagated. Of course, propagating that concept and getting policy-makers to act on it is a mighty task. This is probably why Mr. Welbank, while understanding that very well, turned that challenge into his call for an international modality.

My second set of comments are operational. In almost every speech there is an assertion that our development must stem from our tradition and we must preserve our values. But the subliminal reflex is to go far away from that worthwhile goal and turn to vulgar economic growth. And even on that score, our policy-makers and our governments have not done very well. As a matter of fact, whatever has been accomplished in this area has been a function of geological formation and geological accidents, such as oil supply; it isn't due to even imaginative economic genius or skill by our policy-makers.

Initially, we need to demonstrate to our policy-makers that conservation not only is part of development but in fact pays off economically. How to do that is debatable, but the thing that comes to mind immediately is to convince the government that conservation at least would have the benefit of attracting tourism and thereby stimulating the economy.

A second tactic in this "guerilla warfare" for conservation is the demonstration of pilot schemes to make the arguments more attractive to policy-makers. I know that there is a scarcity of pilot schemes for conservation, but I can think of at least the examples of Sidi Bou Said in Tunisia and the conservation of whole quarters of old Arab cities in southern Spain (Andalusia). In Andalusia the Arabic cities have been not only conserved, they have been then brought back to life.

This brings me to another tactic, what the practitioners call trying to thin out or to depopulate the historic old cities of their present population, who may be there because they are trapped. As Mr. Welbank very well stated, they are trapped and, especially if they are new migrants from the countryside, they have no intrinsic appreciation of that historic site. It is there as a habitat and a shelter, and they would rather go somewhere else if they could find a substitute. There may be an equitable incentive that could be offered to such people to leave the place and be resettled elsewhere. Then, hopefully, other elements of the population, especially the upper-middle class or even upper class elements, can move in and help upgrade and conserve these areas. I say this very timidly because it sounds like an elitist approach; but, nevertheless, if we are thinking practical tactics, this must also be considered. Ironically, our upper classes will do that willingly, if it has the approval of its western counterparts, and once they are involved a more genuine interest and appreciation for our heritage can be developed.

More important in this guerilla warfare of conservation is to ensure that, even for present and future expansion of our man-made environment in cities, towns and villages, the motifs of our culture, the authenticity of our culture, will somehow be reincarnated. This would preserve continuity, minimize the dualities that now exist in our urban environment, and at the same time differentiate the Arab man from his environment.

I am cognizant, of course, of the difficulties of doing all this, but it is a challenge for people like us who are interested, but at the same time marginal to the past structure, the economic structure, and the social structure. And if there is any virtue
in being marginal, it is thinking imaginatively. Later on, we can find a real social class that can adopt our conceptions, or may be persuaded to buy our vision for conservation. The challenge is there, and we all are here to work on it.

Finally, the question of economic costs. We were told that it costs more to build a traditional stone house than to build a cement block house. However, since seventy percent of Kuwait’s electricity goes into air conditioning of cement and glass houses, even the apparent high initial costs of traditional building may be more economical in the long run. Stone-quarrying should be modernised to make it cost-efficient. Of course, we have to adapt to all kinds of modern amenities. We have to sympathize or empathize with the expectations of the people, but I’m sure that this could be done in a way that would not destroy our heritage.

What I found missing in Mr. Welbank’s paper, and this is probably my bias as a sociologist, is the total neglect of the social formations we have to deal with in order even to sell our approach. The social formations that exist now are changing very rapidly. The old social formations—sultans, kings, pashas, ulama, warriors, artisans, and peasants—have not disappeared, but they are diminishing in number. They are not the leading class anymore. We have new social formations emerging everywhere: the working class (an unorganised urban lumpen proletariat that is not an organic part of the mode of production), a salaried and professional middle class, a lumpen capitalist class and a new ruling military caste. It is difficult to think of any country in the Arab world that is not really ruled by a military caste. These are the social formations that we have to contend with. We have to know their biases, their eccentricities, and what makes them tick; and we have to adapt some of our arguments and tactics for conservation to accommodate their legitimate interests and aspirations without a piece-meal or wholesale disintegration of what is best and most authentic in our culture.

Wenner

Mr. Welbank’s comments concerning the centralised and capital intensive nature of modern infrastructure allow me to expand briefly on an important aspect of the role of energy in development in general and with respect to the future of Sana’a in particular. We have come to expect that the services and amenities that are associated with a high quality of life are similarly centralised, and most of us are probably sympathetic to Marx’s comments concerning the “idiocy of rural life”. It is, at least in part for this reason that we have seen the substantial internal migration to the major urban agglomerations during recent decades.

It is important to point out that we have seen a reversal of this trend in a number of western countries in the past few years, that is, a distinct out-migration from the major urban centres. A number of factors are at work here, but among the most important of these are precisely some of the features that made the city attractive in the past: access to employment, greater variety of goods and services, as well as socio-cultural amenities.

The change has come about, because of the fact that industry has begun to move into the rural areas, where the price of land, water, and energy is usually lower. Since the transportation network is able to handle the reverse flow of labour (and even promotes the movement of labour to residences near the industry), we see a distinct out-migration. However, perhaps just as important is the fact that such a change of residence does not require abandoning the access to goods and services, as well as the socio-cultural amenities. This is, in part, due to the development of cable and satellite access to a far greater variety of television (including interactive forms), as well as the fact that the transportation network can handle the flows.

While I would not wish to argue that the same phenomenon is present in Yemen, it is already true that the range of goods and services that are available in the remoter towns and villages has increased astronomically in the past few years—largely, of course, as a result of the development of the road network.

My point is that if we assist countries such as Yemen in improving quality of life, as well as access to goods and services in the rural areas, I think it is quite likely that we will see far less pressure on the limited land and water resources off Sana’a and far less pressure on the traditional features and characteristics of Sana’a that we are interested in preserving. I would not wish to finish without adding what seems to me an important corollary. This road to “development” will be more easily and rationally obtained through the simultaneous development of decentralised and non-capital intensive forms of energy development (e.g. Amory Lovins’ “soft path”), which are more in keeping with the decentralised nature of Yemeni social organisation and which appear to me to be the eventual path for most societies.

Cantacuzino

I welcome Mr. Welbank’s insistence that conservation is about people in buildings and not just about buildings. I wish, nevertheless, that he had been brave enough to drop the word conservation altogether. We are surely talking about maintaining in use, on the basis of upgrading, houses and other buildings that are basically much more functional, comfortable, and appropriate to the way of life than the western-imported box. On this basis of renewal of the old building stock, which is labour-intensive and can be done by local contractors, I find it difficult to accept the statement that “few underdeveloped countries can afford any allocation of national funds to conservation”. In the West, urban quality ultimately depends more on the standard of maintenance and improvement of the existing building stock than on the standards to which the new stock is built. This is because in the Wes: the annual addition to the existing stock is relatively
small. Obviously, the proportion in Yemen is different, but I would guess that the argument remains valid. In this case I would suggest that few underdeveloped countries could afford not to allocate national funds to conservation — but to conservation seen as an integral part of planning and development. I therefore do not believe that urban conservation without sense is primarily a problem of funding.

Arkoun

The problem of preserving the heritage is related historically and structurally to the development into which all contemporary societies have plunged. Historical awareness increased in the West with the spread of historicism and Romantic thought in the nineteenth century. There is no way to true preservation and restoration without a rising interest in history and without sound historical knowledge in any society.

Preservation does not mean multiplying the number of museums and separating the old monuments from contemporary life; it means giving new life to those monuments, making them functional and getting inspiration from them in whatever we produce and depend on today. As for the structural relationship, we test it and observe it when an entire quarter is demolished to build a hotel or a modern high-rise building in its stead; or when peasants move from their rural villages to cities congested with inhabitants in order to find bureaucratic positions or work in factories. This way the solidarity on which "traditional" societies were built are broken and the old family ties are fragmented. Individualism, profiteering, opportunism, and the resulting characteristics prevail over the old values. This is what happens with increasing rapidity in developing societies, especially in Islamic societies. The official discourse insists on the necessity to revive the heritage and to preserve it, because traditional structures are disintegrating while profiteering and the spirit of class conflict are spreading among all social classes.

The movement to preserve the heritage depends on the awareness of all people, done through cultivation and education more than through money and seeking the help of international organizations such as UNESCO. It is necessary that populations of villages, districts, cities, and the citizens in each society take upon themselves to revive the monuments, values and manuscripts that are in their midst. How often we come across a splendid mosque, a majestic building, a rare palace, or a valuable manuscript in Yemen? But, unfortunately, the inhabitants are not aware of the necessity of preserving this unparalleled spiritual and cultural wealth. They lack the means and the necessary cultural instruction as well as the awareness of a need to participate in reviving the neglected heritage and to make a connexion between their past, their changing present, and their future. Only with such an awareness will preservation become a satisfactory operation, and not one that could be subverted by the ruling classes to exploit nationalistic or ideological ends or by the prevailing economic forces to serve the tourism industry.

Abdelhalim

The preservation of traditions is not the central issue in the debate on modernity versus tradition. Rather, I suggest that we direct our energies to examining our traditions so as to identify within them aspects, principles, and processes that will allow us to confront today’s problems. We try to find solutions to our complex urban problems through planning: we prepare skeleton plans, master plans, detailed plans, etc., but we know that these mechanisms do not work in our societies. We plan from above, yet we cannot enforce what we plan or predict its outcome. Instead, the continuous stream of the people’s activities are taking place outside of our plans. We condemn such activities as being informal or even illegal. Perhaps we ought to search for alternatives to master plans in the very activities of the people. I believe that traditions offer us the possibility of identifying alternative mechanisms as well as design solutions.

Abdulac

As social actors, architects tend to strive for a tight control over the production of the built environment. Often this is presumptuous, not only because architects’ authority is limited, but also because most architects have only a limited design ability to be able to cope with the richness of certain living popular traditions, such as those we are now admiring in Yemen. So long as this point is not fully and clearly appreciated, discussions about “modernity and tradition” will continue to suffer from illusions and confusion. Two distinct fields of intervention should be recognised by architects:

1) multiple approaches, such as planning and advisory practices, improvement of institutional and construction processes, the instigation of pilot projects, and the stimulation of awareness about critical issues and solutions among the general public;
2) more traditional action, such as orthodox professional practices serving the public or wealthy private clients.

In this latter case, architects find a great range of possible references rooted in earlier traditions of monumental or vernacular architecture: urban design, street patterns, internal organisation, scale, volume, light, climate control, construction methods and materials, details, decoration and colour. If designers are to seek continuity with the past, they must choose carefully among these references, according to the context and nature of the project envisaged. Too often projects merely display a few superficial features, borrowed from tradition, but cut off from their original raison d’être. We do not need an architecture of pastiche.

Strong civilisations can assimilate previous local traditions, as well as external influences, without compromising their own identity. In its early phases, Islamic architecture drew much inspiration from Yemeni, Persian and Byzantine precedents. Through Byzantium it also inherited from the Greek and Roman civilisations. Western architecture was in turn influenced by Islamic architecture during the Middle Ages, and more recently, in the course of the Modern Movement, which assimilated the image of houses with white exteriors and terrace roofs, such as the Weissenhof Siedlung in Stuttgart. Le Corbusier’s later work, such as his church at Ronchamp, shows the effect of his discovery of Ghedraia.

We live in a small world that is becoming even smaller. As such, I have no objection to blending tradition and modernity, an exemplified in Professor Makiya’s brilliant work.

Ibrahim

Two expressions have been used frequently in this seminar: “human scale” and “human social needs”. To Dr. Makiya I pose the question: Do the two not sometimes contradict each other? Present-day social needs include education, health, jobs, and consumer goods. These needs require, in turn, large-scale institutions such as schools and universities, hospitals, factories, banks, and airports. Modern institutions by definition have built-in features: impersonality, physical hugeness, and speed for the sake of processing a large volume of transactions. So this is one set of needs that inevitably results in constructions that are out of human scale. On the other hand, there is a yearning for what is small, beautiful, personal, and private. How are we to reconcile the two sets of needs that are apparently at cross-purpose?

Makiya

“Human scale” in architecture is the expression of the overall social aspirations, which Dr. Ibrahim has so eloquently expressed earlier. It is puzzling that this question should come from him and not from an aesthetic hypnotised by form and design. Design concepts must have a clear intent and objectivity of endeavour. The quality of design is measured by the ability to relate man to his social environment. Creativity and functionalism are not contradictory but constitute parts of a whole which embraces both the subjectivity of the artist and the objectivity of purpose. In fact, the ideology of Islam embodies a demand for unity along with the freedom of diversity within a framework of ethical, social and cultural values.

The need for human scale is universal. Just because contemporary bad practice has ignored human scale does not mean that human scale is no longer relevant; it points to a major failure in contemporary practice. This failure is partly a result of the breakdown of continuity in the architecture of Islamic regions. Traditional practitioners transmitted the wisdom of the past and perpetuated spontaneity within human scale. They therefore participated fully in expressing the beliefs and values of society. A recent example of ignoring the human scale is a project to place a building 250 metres high in the city of Baghdad, submitted to a competition. To impose such a building means not only ruining the scale of the city but imposing an idol on it.

Mumtaz

I would like to respond to some of the remarks made by relating a story. When the idea of this seminar was first mentioned by the Steering Committee, Charles Correa suggested the title “New Lamps for Old” as a theme. The idea had come to him as a “flash-in-the-pan”, and he had made the suggestion half in jest. But the idea intrigued me, and I began to think about it. I recalled that the phrase was borrowed from the well-known tale of Aladdin and the Magic Lamp, in which Aladdin’s mother is tricked by the evil magician into exchanging the old lamp they had inherited for a shining new one, little realizing that it was the rusty old lamp that contained the key to treasures beyond all imagination. As I recalled the story I suddenly realized that the tale itself, like the old lamp, contained a secret message, which needed only to be “decoded” to reveal to us the key to a hidden treasure.

This led me to the realisation that in fact most of our inherited culture consists of magic lamps in various forms — fables, poems, songs and architecture — and that these traditional forms speak to us at various levels. A simple children’s fable or an epic, understood at one level as a fairy tale or a romance, could reveal itself to be a profound message at another level about the nature of reality, about the Unity of Being, about man’s role on earth and his ultimate goal and purpose, and about the way to attaining Truth. Another characteristic of our traditional art forms was that the message was wrapped in several layers of meaning. The outermost layer — the surface, the apparent form — was invariably attractive aesthetically. These devices ensured that the inner message would be
passed on from generation to generation because of the universal appeal of its outer form and the popular level at which the outer meaning could be communicated.

These realisations have helped me to begin to understand the real value of our traditional cultures. As the transmitters of the “wisdom” about which Professor Makiya spoke, they serve to remind us of the alternative purpose and objective of man and society. As for Dr. Ibrahim’s quest for a way out of the “dilemma”, as he calls it, I am afraid I do not think that the contradiction between the values represented by our traditional cultures and the values symbolised by the term “modernity” can be resolved. To the extent that they represent the contradiction between the materialist and idealist (or meta-physical) world view, the contradiction will remain. I also think that the increasing ability of man to know and to manipulate the physical environment — that is, accelerating technological development — will continue to strengthen the appeal of materialism for the materialists and that idealism will continue to remain a minority position. But it will survive, if only as subliminal instincts within most of us: the instinct to love, to plant roses, to watch a sunset, to hold a seminar like this concerned about the conservation and preservation of our traditional heritage.

It does not matter that most of us cannot define why we must conserve and continue the traditional values. As long as some of us can feel, if only instinctively, enough to ensure the survival of these forms, the message will survive for somebody to come along and unwrap the package, to read the message and pass it on.
The pattern of urban settlement is a result of the interplay of many factors: topography, climate, materials, building technology, existing infrastructure, and cultural expression. The interplay of these forces has resulted in a bewildering array of examples of urban settlements.

Of particular concern to us here are two factors: 1) the cultural dimension; and 2) the role of infrastructure. At first glance it may seem a rather peculiar choice to focus on, but, as will become apparent later on, there is an interesting relationship between the two.

Elsewhere I have argued that there is an intensive interaction between the physical and non-physical aspects of the built environment, the latter being both a reflection of the former as well as a framework for its existence. Without the non-physical aspects, our cities are nought but buildings, devoid of vitality and life.

**The Cities of Islam**

In a brilliant essay on the subject, Professor Oleg Grabar pointed out that the cities of Islam could not be understood without careful examination of the mores of their bourgeoisie. This class, dominated by merchants, had a consistent relationship with the religious or pietistic movements, and those movements could not have flourished without the active support of the bourgeoisie. There is a sort of “Yin and Yan” complement between the bourgeoisie — the epitome of the down-to-earth — and the dominant religious ideologies of Muslim cities throughout the Middle Ages.

Historically, Islam did ask men to forsake the pleasures of this earth, but it prescribed moderation and the pursuit of a “just balance”. Thus, in spite of clear pre-scriptions against the amassing of worldly possessions, the bourgeoisie, as a class, tended to identify strongly with their possessions and the greater glory of their city.

*The city of Kohlan, Yemen Arab Republic.*

*Photo: C. Little/Aga Khan Awards.*
The institutional framework that dominated the cities of Islam was quite different from that in the West. In the Muslim city, the institutional system was the source of its resilience. In a profoundly insightful passage, Grabar notes:

"For just as the Muslim City did not acquire the urban institutions of antiquity or of the medieval West, it did not acquire sclerotic organisms which could stifle it. Based as it was on a series of bonds between individuals and between units of very different kinds, bonds which were rarely written down but carried on from generation to generation, the Muslim city could define itself...in ethical or spiritual terms, for it was based on a relationship between men and not between institutions. This human side explains so much of the city's physical aspects, handsome new houses and monuments next to dilapidated ones originally fulfilling the same purposes, constantly refurbished bazaars, constant relationship to men of the past through large cemeteries and easy abandonment of burial places of forgotten men. This was all possible because it was men rather than formal institutions that remained and men could adapt themselves to new circumstances. Furthermore, the Muslim mould, which was given to whatever institutions or problem arose, made it possible for Andalusians to move to Morocco, for Moroccans to come to Iran and for more than half the Muslim world to be governed by Ottoman Turks. It is Islam which gave its resilience to the Muslim city and to its bourgeoisie, not because it was necessarily aware of all urban problems but because it had the abstract forms in which all of them could be resolved." [1]

**Regional Transport**

Many of the great cities of Islam flourished or died away in direct response to the pressures and shifts of trade routes. The growth of a great metropolis such as Cairo has been shown to follow the caravan route, rather than the Nile. [2] Examples abound of "flat towns" created for political control by administrative decrees; but, regardless of their raison d'être, the cities of Islam could not flourish without good access via the caravan routes or alternative transport (e.g., the fellugahs on the Nile).

The mountain-town of Hajja, Yemen Arab Republic. A mountain road accommodates regional transportation.

*Photo: W.L. Porter.*

Regional transport, in-city transport, and water supply and sewerage. In more recent times, electricity and telecommunications have also had a major role to play. But in the medieval period it was largely the first three that constituted the framework within which the Muslim bourgeoisie articulated its unique creation of urban space. [3]

Trans-shipment points became particularly lucrative locations and tended to grow at a fast pace.

This process is not unique to Muslim cities, and many cities whose livelihood rested on trade and/or the security thereof (such as Petra and Dawmat al-Jandal) were abandoned when this raison d'être was overtaken by events.

**In-City Transport**

The uses of streets and lanes in the Muslim city served multiple functions: residential access, free movement for throughputs on the thoroughfares, a combination of sales and transportation space in the souks, public gathering, and extension space for prayer around the mosque.

The Sharia (Islamic law) provided that "some" space around a building was part of the property and accepted "friendly settlements" between neighbours. This

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**Underlying Patterns**

Given this unique institutional framework, which allowed sufficient flexibility for adaptation with continuity, what were the interactions between the patterns of urban form and infrastructure? It is perhaps useful to distinguish three main forms:
resulted in air-rights developments, encroachments of the private on the public domain, and unique solutions for corners and sublots. A variegated pattern of complex nooks and crannies created a complex maze of streets in the old medinas of the Muslim East. These organic patterns seemed completely senseless to western visitors, whose frame of reference was the rectilinear grid of orderly streets marked out in keeping with a single guiding vision for the whole city. Most important in the Muslim context, however, was the constant interplay between neighbors and between the public and private domains. The pattern of settlement of the older medinas cannot be understood in other terms, and the impact of modern technology and its requirements in terms of infrastructure, especially in transportation, were to prove nothing short of phenomenal.

First the railway, then the automobile, came to make the rabbit-warren type of settlement that had been so suitable in terms of pedestrian and four-legged transport, totally inadequate — if not thoroughly obsolete — in terms of the new machine transport. The railway stations, being natural trans-shipment points, created new foci of urban activity. With their ancillary requirements for vast warehousing and storage facilities, coupled with the resulting emergence of a totally new type of commerce and industry, the stations became new "monuments" that dealt a lasting blow to the well-established traditional urban pattern with its hierarchy of streets and spaces receding from the public square next to the mosque, down to the local harat or zugag, and opening onto a few private homes. The impact of the new transportation technology also was felt pari passu in the very organisation of the urban fabric of traditional Muslim cities: the ethnic or guild quarters. It is true that this impact was not immediate — and many other factors played a role parallel to the appearance of rail and trolley — but, undeniably, the new transport technology had a very major impact on the overall pattern of settlement.

Sidi Bou Said, Tunisia. The street serves a multitude of functions.
Photo: I. Serageldin.

Modern urban streets typically serve vehicular movement only.
Photo: I. Serageldin.
The impact of the automobile was far more devastating. Unlike the public cars, which ran on rail along well-established routes, a private vehicle could go anywhere. The demands of such vehicles, in terms of wide roads for movement and space for parking, began to dominate in the thinking of transport and urban planning authorities over the last fifty years.

Attempts to introduce these new wide roads into the old cities were frequently insensitive and ineffective. The sharpness of the contrast between the scale of the machine and the human scale of the old cities remains striking. Meshing together the requirements of the two into a harmonious environment remains the biggest challenge for urban planners in the coming generation.

Water Supply and Sewerage

The system used for the provision of water supply has always had a close relationship to the urban pattern of the city in question. Thus the cities that relied on cisterns (such as Jerusalem) were different from those that had access to abundant water from canals and aqueducts (such as Fes or Iranian cities), and these in turn were different from cities by rivers subject to flooding (such as Cairo).

The interaction between the water supply system and the urban form has been a subject of study in such places as Isfahan. There one can see the primary network of in-city transport, which links the Masjid al-Jami in the north, by the magnificent bazaar that acts as the “backbone” to the skeleton of the city, down to the Maydan al-Shah, built in the sixteenth century. This initial system grew further by covered/shaded way south to the Zaydaneh (eternal) river, and north from the Masjid al-Jami to the north gate. This was the commercial, religious, administrative spinal cord of the city. A secondary system of residential roads branches out from this primary system, in a beautiful organic design. Water comes in as a tertiary system of subterranean channels that echo the secondary transport system and bring water from mountainous catchment areas as far as ten miles away, supplementing the river and feeding gardens, bath houses, and underground cisterns. The points at which these channels intersect the other system are significant foci of activity and architectural interest.

In more modern times, with the phenomenal growth of cities, densification of settlement, and congestion, the provision of water supply has been problematic in old districts. But standpipes pumping and ingenious connexions (often illegal) have overcome many of the difficulties of layout and the costs of more orthodox approaches.

Sewerage systems, on the other hand, seldom had major impact on the layout of old cities. Cesspits were frequently sufficient, and open-drain sewerage was the norm. In modern times, however, waterborne sewerage has become the norm, with the need to establish a hierarchical network and appropriate treatment. The scale of these infrastructure works and the need for proper alignments has tended to make the introduction of these works after the fact extremely difficult and costly. New lands, open to new settlement, have been designed on a scale commensurate with the needs of the automobile and laid out in accordance with the needs for the efficient provision of modern infrastructure.

Electricity and Telecommunications

Perhaps the single most pervasive agent of modernisation has been electrification and its swift companions, telecommunications and the mass media. Urban electrification has been generally easy to achieve because it was technically easy to hook up houses to the existing system, and because electricity has been generally perceived to be of merit. But this very flexibility has enabled these systems to be introduced into disparate urban patterns without difficulty.

A Dichotomy

From the preceding it becomes clear that the pattern of modern infrastructure and the pattern of modern urban settlements went hand in hand. They differed markedly from those of the old cities. For example, such old metropolises as Cairo and Damascus have grown by a process of accretion of the “new” onto the
Elements of the new Yemeni skyline.
Photo: C. Little/Aga Khan Awards.

"old". A dichotomy results in the urban fabric. Large roads, high buildings, "hi-tech" manifestations and industry, mobility, cars, and more or less ostentatious wealth represent the "new". The traditional organic urban fabric, with its patterns of narrow streets, its small buildings, its artisan workshops, its static or pedestrian environment, and, above all, its visible poverty, represents the "old".

This dichotomy leads to a series of related problems. If growth occurs at the periphery, with the old city "trapped" at the urban core, tremendous economic pressures are created for the re-use of the land, with concomitant pressures on the poorer families. These old cities also retain the "spread-out" demographic pyramid typical of less developed countries, with a high percentage of dependents (children and old persons) whose needs (e.g., for leisure space) are not met. A broader social concern is that stemming from the "ghetto-ization" of the old cities — or paradoxically its opposite, the "gentrification" process.

The economic base of the old city is ill-equipped to deal with the growth of wholesaling and the use of small machines, with all the attendant effects on the artisan class; or with the growth of congestion, noise and pollution. The limited economic base of the old city generates insufficient revenues for the public sector, while private profits are rapidly spirited away elsewhere. The challenge of a successful economic rejuvenation of the old city core is yet to be met.

Finally, patterns of institutional fragmentation, including those relating to land ownership, provide a further obstacle. The physical fabric of the old cities provides an all too evident summary of the dichotomous effects of these various influences, ranging from problems of density to those of congestion to the very deterioration of the urban fabric itself — a pressing challenge in cities with a rising water table that are already full of dilapidated and deteriorating buildings.

Cultural Expression

The city in the Muslim world has always been the cultural expression of the bourgeoisie. The dichotomy we have observed has been the result of a particular perception of the Muslim bourgeoisie of the image of "progress". It is an image that is distinctly westernised, an image of an ideal society where technology dominates and gadgetry abounds. It is this image, fostered in large part by the colonial experience, that helped to strengthen the dichotomisation of which the visual evidence is so compelling. The interaction of the values of an elite educated in the West — living in glass and steel buildings and riding motorcars — with the prevalent pattern of town planning in the less developed countries remains a sorely under-studied subject.

Yet, undeniably, the influence is there and will continue until a massive re-education
have been among the few who did not turn their backs on the rich architectural and urban cultural heritage of their country. It is an important example, worthy of high praise. Other Islamic countries are also beginning to come to grips with the problem. The solution of that problem is still hazy at best, but we know for certain that it does not lie in slavishly copying the past. For those who would try, the dimensions of modern technology and its related infrastructural requirements will quickly remind them that the path off excellence requires creativity.

Reference Notes


3 Grabar, op. cit., p. 100.

4 For a further discussion of the pattern of the traditional Islamic city, see Stefano Bianca, "Traditional Muslim Cities and Western Planning Ideology: An outline of Structural Conflicts" in The Arab City, op. cit., pp. 30-52; and Samir Aboulac, "The Relevance of Traditional Muslim Housing Designs for Contemporary Arab City Planning" in ibid., pp. 294-302.


6 Grabar, op. cit., p. 91.

7 See Bianca, op. cit., for an elucidation of this point.

8 See also Abdulla Yahia Bokhari, "On the Identity of the Arab Islamic City Past and Present" in The Arab City, op. cit., pp. 78-82, especially the illustration on p. 79.


10 For a discussion of this point, refer to I. Serageldin, "Housing the Urban Poor: The Role of the Public Sector" in Designing in Islamic Cultures 2: Urban Housing (Cambridge, Massachusetts: The Aga Khan Program for Islamic Architecture at Harvard University and the Massachusetts Institute of Technology, 1982), pp. 74-78.


Rural Energy Issues in a Developing Society: The Case of Yemen

Manfred W. Wenner

For the major industrialised states of the world, the primary effect of the increased price of petroleum in the last decade has been largely measured in terms of its impact on the automobile, the home, and the price of goods and services, often of luxury items. For the less-developed countries (LDCs), the consequences, as well as the basic issues involved, are often quite different and far more substantial. This paper deals with one aspect of the issue: the effect of increased petroleum prices on the various contemporary strategies for rural development, the concomitant effect on traditional energy resources, and the possibility of employing alternatives.

Regardless of whether development is measured in terms of macro- indicators (such as gross national product or gross domestic product), or micro-indicators (such as basic needs), energy development appears critical to national development. The continuing evidence for the existence of a strong positive relationship between energy prices (particularly for oil) and the rate of growth in the gross domestic product shows what seems only logical: that energy, in some form, is a requisite to the satisfaction of what have come to be termed "basic needs"—i.e., food, health, education, shelter, clothing, and security. Further, energy development plays a vital role, indeed is a critical factor, the economic development of rural areas, regardless of the development strategy to which one is committed.

2) even if there were incomplete or insufficient "trickle down", the mechanisms of government, in one fashion or another concerned with the plight of the poor and in some way prepared to respond to their demands and economic situation, would extend the benefits of growth through a variety of mechanisms, such as progressive taxation; and

3) in the most extreme instances, it could be argued, the fate of this portion of the population was not of immediate concern since there were other and more immediate political and economic issues that deserved priority and were in any event a necessary prerequisite to effective action with respect to the poor.

The overwhelming number of development organisations have rejected one or more of these assumptions/propositions. In response to their perceived shortcomings and deficiencies, a new approach evolved: the "basic needs" approach, placing the emphasis not on general economic growth but, rather, on direct and immediate improvement in "the conditions of life of the rural poor—in particular, their needs for essential goods and services".1

This approach targeted several specific goods and services, which although subject to modifications based upon country and region, had a common core. This core included basic health, nutrition, education, water, sanitation, shelter, and security. And, although the target population also varied somewhat from country to country, the "normal" target group was the poorest 40 percent.

It may be argued that with all its problems, and they are indeed numerous, the growth strategy is not without some merit, even though it may be inappropriate for rural or national development in specific instances. Nonetheless, the basic needs approach, while also not without its faults, has been accepted for the most part by the major development organizations and donor programs.

The United Nations, the World Bank, USAID, OECD, and the major nonprofit organisations (such as Resources for the Future, World Watch, and VITA) have all contributed to the evolution of a comprehensive approach to rural development. In part, they have also contributed to the subject of interest here: rural energy development.

The argument of this paper is that rural energy development is a prerequisite to the provision of the accepted list of "basic needs". It seems most unlikely that most of them can be provided effectively without a substantial energy input.

Energy Needs in a Developing Society

Two types of energy needs, based on source mobility characteristics, can be distinguished. The first type requires a source of power (fuel) as well as a conversion process that is highly mobile. In general, this type is used for transport and for some agricultural applications (such as plowing, cultivating, and harvesting). It has been traditionally satisfied by a combination of human and animal resources. The modern equivalent and replacement is, overwhelmingly, the internal combustion engine (ICE).

The second type of energy needs includes all those situations in which a lack of mobility is not a constrain. This type generally includes industry and manufacturing, most household applications, (such as heat and cooking), agricultural applications such as irrigation; as well as any associated activities, (such as food processing). Even in the least developed societies and states, it is this second category that accounts for most of the energy consumed in rural areas. Household consumption alone accounts for about 50 percent of all energy consumed in rural areas.2

In addition to mobility and application, however, there are other factors that must be taken into account in any analysis. The most important of these are: 1) transmissibility (transportability); 2) applied efficiency (which of course vary according to end-use); 3) the physical properties.
of the fuel; 4) cultural preferences for specific tasks (for example, the Yemeni wood-fuelled clay oven, *tanurr*, will assure that demand for fuelwood will continue to remain high); and, 5) the availability of supplies (which implies some knowledge of sources both domestic and foreign). Some combination of these will determine how applicable any energy source is to a particular task or function.

Rural energy needs are usually satisfied by a combination of traditional and modern technologies. One of the most traditional of all, fuelwood, accounts for by far the largest share of traditional energy supplied to and for households. This dependence has led at least one authority to declare the existence of a "second energy crisis" — that is, the depletion of LDC forest resources to the extent that no resources of this type may be available within the next forty years. The substantial number of more immediate side-effects of forest depletion (such as increased erosion of top soil and flooding) have been adequately covered elsewhere.

In the event of severe depletion of fuelwood supplies, the rural population generally switches to crop residues and/or various kinds of dung (the use of which also has substantial impact on soil fertility and crop yields due to the soil nutrients that have been diverted).

Where the supply of traditional fuels is limited, or where the financial resources are available to permit the use of commercial (i.e., modern technology) fuels, kerosene is the first choice, for lighting as well as cooking. Kerosene is easily transported, is high in energy content, and usually is widely available. Even though it is relatively expensive, it is competitive with other sources if it is burned efficiently. On the other hand, it produces substantial amounts of fumes and soot and may present a serious fire hazard if not carefully used. Because of its advantages, kerosene is often subsidized by governments, but the rapid increases in petroleum prices in the 1970s caused some severe economic strains in some of the countries that have done so. Several sources of energy can be substituted for fuelwood and kerosene, each of which has some advantages and disadvantages — both for governments as well as the ultimate consumer. The following are the best known of these alternatives:

1) *Charcoal* is easier to transport, contains more energy per unit of weight (or volume), gives off fewer toxic gases, and generally is more efficient in home uses. On the other hand, its source is usually the self-same forests that are the source of fuelwood, its manufacturing processes are often inefficient, and the emission of environmentally damaging side-effects tends to be concentrated in the production areas (usually near cities which already have air pollution problems).

2) *Microbiological conversion* of plant and animal wastes is well-tested and currently in use in the People's Republic of China and India.

3) *Wind energy* is primarily a source of mechanical energy (for pumping), though the technology for its use in the generation of electricity is also well-established. Furthermore, both the necessary materials and operating skills are not difficult to transfer to new surroundings.

4) *Fuel crops* is a technology that encompasses a wide range of activities, from village wood lots, to alcohol production from specific plants (as in Brazil), to large-scale electric power generation using plantation grown trees with short maturities.

5) *Solar energy* has two forms: 1) "low tech" variation, such as passive solar installations for water and space heating, and 2) a "high-tech" variation, such as installations that use solar cells for on-site electricity generation.

6) *Geo-thermal* energy. Despite its experimental and "high-tech" characteristics, some survey of geo-thermal resources appear to be needed in view of the many hot springs and sub-surface conditions recently highlighted by the earthquake.

7) *Small-scale hydro-electric generation* requires a substantial investment in dams and diversion projects to retain adequate water supplies but has the immense virtue of not "using up" the water resources that are used for generating purposes. It is commonly the most desired of all.

8) *Rural electrification* can be undertaken in two distinct and perhaps complementary approaches: through grid extension, that is, large-scale conversion facilities and the construction of the network of lines to distribute the electricity to the ultimate consumer; and through decentralised generation, usually by ICES (additional inputs can, of course, be provided by one or more of the alternatives given above).

Electricity, being a "high-quality" energy, is extraordinarily flexible and adaptable to a wide range of applications. These include lighting, cooking, power for both industry and agriculture, power for such highly desired modern devices as radios, televisions, miscellaneous household appliances and labour-saving devices, as well as power tools that may be essential to the development of any localised industry. Furthermore, it has a very long list of additional advantages: no fumes at point of use (though there may be considerable pollution at the point of generation), little risk of fire, generally moderate prices, generally lower capital costs for the machinery employing it, lower maintenance costs, higher reliability, and longer lifespan.

For all of these reasons, there is a clear and overwhelming preference for the widespread development of electrical generating facilities — both in the developing and developed areas of the world. It is, of course, of some relevance that a good deal of the social and economic characteristics of the developed world are attributed to the widespread availability of electricity. In the United States this same connexion was made by President Franklin D. Roosevelt in his programmes to provide electricity to the rural areas as a means of assuring their social and economic development.

Electricity is not without its problems; these may vary, however, depending upon
whether or not one is concerned with grids or local generation. For example, autogenerators are considerably less efficient than large-scale steam power plants. Further, autogeneration applications are usually lacking in any back-up system, which makes reliability for high tech as well as average users a problem. On the other hand, grid systems, which can pick up the slack created by local shortfalls or problems, rely on long lines that suffer a greater likelihood of failures resulting from line breakages (whether these are the result of accidents or deliberate acts is a separate but relevant issue in many political environments). Further, such installations also require massive expenditures for construction and materials, particularly in mountain environments.

At least some of these problems are evident in Yemen. For example, although all governments since the revolution have committed themselves in one fashion or another to the development of electricity resources, only the major cities are currently supplied by centralised generating facilities. In many (if not most) of Yemen’s smaller villages, small diesel-fuelled generators have been installed by local entrepreneurs who charge a fixed fee for their electricity (usually available from sunset to about midnight). The average cost for such locally produced electricity is around 70 cents (YR 15) per kilowatt hour—a rate that is roughly ten times what OECD consumers pay.

Energy Availability in Yemen

Modern Yemen is not well-endowed with any energy resources: it has no presently known, commercially feasible deposits of oil, coal, or uranium. To make matters worse, it has no extended forest areas; indeed, it does not even have large regions of abundant natural vegetation that could be used as a continuing source of fuelwood.

The major deforestation took place centuries ago. However, the pace of such deforestation has undergone rapid acceleration in the past decade due to increasing population pressures as well as greater population mobility. Yemen is currently estimated to have about 1.5 million hectares under sparse woodland and shrub (which the World Bank has estimated at about 8 percent of the total area). In fact, this vegetation is so sparse that it is of little importance beyond the local level, and it is precisely this fact that leads to a rate of deforestation beyond the ability of the rangeland/scrub areas to replenish under current demand rates.

As in other less developed countries, especially those where there have been notable increases in income, the demand for energy increases. In Yemen this has been most notable in the demand for electricity, and the various governments since 1970 have committed at least some resources to expanding the availability of electricity to the major towns and their surrounding rural areas. In the First Five-Year Plan (1976-1981), some 7.85 percent of the plan was devoted to electrification, and it was expected that private investments of roughly one-seventh of the government’s expenditures would contribute further to the spread of electricity into smaller towns and villages.

In the meantime, what happened to the traditional sources? The demand for these fuels (wood and kerosene) rose dramatically, which is probably illustrated most effectively by the fact that fuelwood more than quadrupled in price in a span of less than two years. Clearly, the demand for energy—both in the urban and rural areas—was increasing at a considerable pace, and the variety of other development projects supported by both the government and local organisations (education, water, and health facilities) further promoted the demand for electricity and even required that additional energy resources be made available.
Yemeni Government Energy Policies and Alternatives

In brief, it must be said that the Yemeni government has no coherent national energy policy, either for the urban or the rural areas. But this is not to say that the government is not aware of the issues and problems, nor that it has not developed specific plans to cope with the issues raised here.

In one sense, it may be argued that it would be premature for a country with the variety of issues and problems that beset contemporary Yemen to even consider the drafting of a coherent national energy policy. Indeed, many other states with far more resources and far more complex infrastructural investments have yet to produce a coherent national energy policy — not the least of these, the United States.

The problem, as social scientists are fond of point out, is that the lack of any agreed-upon and stated policy does not mean that there is no policy; the myriad decisions that are made on an ad hoc basis to cope with immediate problems still constitute policy, and the decisions so reached still have significant short-term and long-term effects.

In some respects, of course, Yemen is not unique. A number of other countries have some of the same problems in developing rural (as well as urban) energy resources. There are three questions that all these countries need to address:

1. Will rural electrification become the government’s policy for developing rural access to energy resources, if only by default (in the sense that no systematic investigation or analysis of alternatives is ever undertaken)?
2. If rural electrification is consciously selected as the desired alternative, will the government take an active role in developing a national grid, or will the decision of where and how much be left to individual entrepreneurs or the assis-

tance policies of donor organizations and states?

• Are there any real alternatives?

If one considers the experience of the developed states during the last hundred years, it would certainly appear that there is no real alternative to rural electrification. Flexibility and convenience, which have come to be expected as rights in the Western states, and are easily learnt “demands” in the less developed countries, do not appear to be attainable by any other form of energy.

If that is the case, the question becomes an entirely different one: What will be the means by which electricity will be provided/generated? It would seem that some viable alternatives can be offered. The following general analysis is based upon a review of the situation in Yemen.

1) Certain areas of the country, most notably those in the south, appear to be amenable to the construction of “mini-hydro” systems. Although it is certainly true that we have very poor or nonexistent data on stream flows and water run-off rates, the existence of previous dams in many areas, rainfall statistics, geologically appropriate conditions and the experience of others with analogous conditions would seem to indicate that this alternative warrants further investigation. Of considerable interest here is that mini-hydro tends to be a benign energy source (both in that it does not pollute, and that it allows the
water to be utilised for other purposes after its generating role is completed, and that it is exceedingly durable and does not usually require extensive maintenance. Interestingly, at one point it was proposed that some 300 small dams be constructed for the exploitation of wasted rainwater; further, about 100 dams were to have been built during the First Five-Year Plan at a cost of about YR 150 million. But there does not seem to have been any effort made to determine whether mini-hydro might have been tied into these water control projects, thereby doubling their value to the population. Even more interestingly, this project to build 100 small dams was one of the suggested projects that was utterly ignored by foreign donors.

2) Those areas of Yemen with the lowest rainfall are, of course, those with the highest solar flux. While it remains the case that the current cost for solar electricity is considerably higher than that for fossil-fuel generated electricity, a number of factors warrant further investigation in the Yemeni context. First, the cost of fossil-fuel generated electricity must take into account the tremendous equipment and installation costs, which will be amortised for the near future by a very small market. Second, although the current price for fossil fuels appears relatively stable and may undergo a decline in the short term, it is inevitable that it will continue to increase in the future. Third, if the country does not discover indigenous supplies of fossil fuels that are both appropriate to the facilities constructed, and commercially extractable, it will have to depend upon imports to fuel the generators. As many of the OECD states have discovered, this situation is fraught with danger, and usually is not politically popular. Although many of its neighbours on the peninsula are very well endowed with the oil necessary for massive grid systems, it is interesting that these same states are moving into the forefront of developing solar alternatives.3

Fourth, there is considerable evidence that the cost of solar electricity will experience another sharp decline in the next few years, possibly as great as that which occurred between 1975 and 1980.

3) Village woodlot development and afforestation schemes do not appear to have been seriously considered in the Yemeni context — one of the reasons for the drastic increase in the price of fuel-wood for the rural poor. As a result, there is continued erosion and additional environmental damage that will be difficult to correct. And, of course, those people who shift to kerosene contribute further to the government’s imported fuel requirements. It would seem that a program of afforestation and village woodlot development is both appropriate and feasible in the Yemeni context — both in terms of traditional preferences as well as in terms of the agricultural skills available. Neither would seem to require massive assistance programs from donors, thereby making a significant contribution to Yemeni energy independence.

4) Last, but not least, it also appears that wind-power could be a real possibility in many areas of Yemen. While additional research would need to be done, the data already available shows a remarkable consistency of windspeed in certain areas. The technology is not complex and is remarkably reliable, especially insofar as it is used for mechanical purposes. Even its development as a source of electricity would not be that difficult, since much of the hardware could be manufactured locally. The necessity of importing inverters, and similar “high-tech” components from the western states for the short-term would probably still cost less than the kinds of equipment and transportation cost associated with the alternatives.

Conclusions and Recommendations

For Yemen, which must perforce recognise that its role and influence in the making of regional and global energy policies will remain extremely limited, certain conclusions seem inescapable.

If Yemen opts for rural electrification in the Western mode as a means of promoting social and economic development, it opts to enter the modern world through the “back door”. Moreover, countries like Yemen will be forced to spend literally billions of dollars to create a system of generation and distribution that is likely to be an insupportable burden on the remainder of the economy and, even more important, stands a good chance of being outmoded by the time it is installed and capable of being utilised efficiently by precisely that portion of the population it seeks to assist. Yemen and its cohorts — no matter the region of the world — ought to consider undertaking their own research programmes to:

• assess the effectiveness of traditional technologies and energy sources; and
• investigate the methods of coping with local energy supply problems through the development of indigenous alternatives that have developed in such disparate areas as New England in the United States, Wales in Great Britain, Indonesia, and the People’s Republic of China.

The massive importation of machinery and technology associated with the construction of national grids will induce a dependence upon the supplier states where no such dependence existed before. As many of the projects developed in the People’s Republic of China and India have shown, it is possible to develop less-expensive sources and techniques that use indigenous materials and talents to bridge the “energy-gap” that currently exists.

Perhaps the time has come for some country among the LDCs to take the lead in developing a consortium organization to provide countries that desire to promote rural energy development with an effective means to gather, exchange, and collate the available information on these matters. (Perhaps the upcoming First Arab International Energy Conference will help contribute to something of this sort.) But this should not be its only purpose; it should, as a regular part of its operations, undertake to fund both research and specific projects that assist its members in coping with the kinds of issues and problems already dis-
cussed here. There are probably few ways in which countries facing specific problems (such as developing access to rural energy supplies in difficult terrain) could more effectively guarantee their economic and political independence, as well as make certain that the technology is appropriate to their own needs and circumstances, than to effectively undertake and promote their own research.

Reference Notes


The Sana’a Urban Development Project

Robert K. Adams

The Sana’a Urban Development project was designed to be the first in a series of urban development activities to receive continuing support from the World Bank. Consultants proposed the upgrading of two urban neighbourhoods, one in Sana’a, the other in Hodeidah, as well as one sites-and-services project in Sana’a. Both projects in Sana’a were adopted in the budget of the World Bank, whereas the implementation of the project in Hodeidah was postponed.

The broad objectives of urban development, encompassing institutional as well as physical development, were examined in preliminary studies for the Sana’a project, and subsequently channelled into the specific arrangements for the improvement of the Musayk area of Sana’a and the development of the Sawad Sawan site. These arrangements included:

- a pilot project of land registry;
- mortgage credit finance for homeowners (loans for building materials);
- technical assistance throughout the period of implementation;
- physical design of infrastructure; and
- design of demonstration houses in Sawad Sawan.

This paper deals with one of three development projects in Sana’a, the sites-and-services scheme for the Sawad Sawan district.

The Sawad Sawan scheme was targeted for 2,000 households with incomes in the range of the lowest 30 percent of the urban population. The number of households and their demographic characteristics were derived from sample surveys carried out by the consultants, from the 1975 census statistics, and from studies made by other consultants.

The general objectives of this project as defined by the World Bank were:

- to address the housing needs of low-income groups;
- to be financially self-supporting so as to be replicable on a large scale; and
- to be a demonstration that would initiate a series of urban projects to receive continuous Bank support.

The Bank recommended an average project density of 80 households per hectare, which would result in a population density of about 450 people per hectare.

Growth of Urban Populations

On the basis of the analysis of previous planning studies, the 1975 census and sample surveys carried out during the project, the Bank consultants arrived at the following conclusions:

1) The analyses of the growth of the built-up areas of Sana’a and Hodeidah that were made in late 1980 by the project team showed that the actual growth rates were 6.3 percent for Sana’a and 7.5 percent for Hodeidah.

2) Since these two towns account for a considerable percentage of investment, there is no reason to think that Ta’iz developed at a faster rate, especially since the site presents certain restrictions.

3) The secondary centres developed at quite different rates between 1975 and 1980. In the Hodeidah hinterland, the al Marawiah-Bajil route (Sana’a road) was favoured over the Bayt al-Faqih-Zabid route (Ta’iz road), and only Amran, Dhamar, and Ibb-Jiblah saw considerable growth on the central plateau.

4) If new routes reinforce the tendency toward rapid growth on the part of the small urban centres, and especially on the part of seats of government, the absolute increases in the population of these towns will remain low because of the originally small size of these centres.

5) The rural areas already have a very high population density in terms of arable land, and, except for certain isolated projects, there is no reason to think that the population has grown considerably in these areas.

6) There is therefore a basic contradiction between the use of a high rate of natural growth and a small increase in the number of emigrant workers.

A threefold increase in funds transferred from abroad in constant value would tend to indicate that the number of expatriate workers underwent a considerable increase between 1975 and 1980.

In view of the foregoing, the growth in the population between 1975 and 1980 was estimated on the basis of the following assumptions:

- annual growth rates for the three major urban centres based on those observed in the cases of Sana’a and Hodeidah and upon a figure of 6 percent for Ta’iz (as was the case of Sana’a);
- stabilization in the rural population;
- a twofold increase in the number of short-term expatriate workers;
- a natural growth rate of 2.2 percent in the resident population, which corresponds to a growth rate of 2 percent in the de jure population after incorporation of the other assumptions.

Given this situation, 75 percent of all migration from the countryside is to other countries and 25 percent to the urban centres. In the latter case, two-thirds of the migration is to the three major urban centres — Sana’a, Ta’iz and Hodeidah.

Population Growth in Sana’a

In 1962 it was estimated that the population of Sana’a had already reached 55,000 inhabitants and that approximately 35,000 of these inhabitants lived in the old city. In 1972 the sample survey conducted by Itaconsult recorded 77,922 inhabitants, but the survey conducted by Central Planning Organisation (C.P.O.) estimated the population at 91,795 inhabitants, of whom 5,400 were temporary residents. The difference between the two figures may stem from the fact that the Itaconsult survey did not take into account the population of institutions, temporary emigrants, and the population of the villages close to the urban core, which were subsequently incorporated into the city.
Population and Buildings in Sana'a, 1972-80

<table>
<thead>
<tr>
<th>Year</th>
<th>Reference</th>
<th>Population</th>
<th>Buildings</th>
<th>Inhabitants per Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972</td>
<td>C.P.O. Survey</td>
<td>91,795</td>
<td>16,662*</td>
<td>5.5</td>
</tr>
<tr>
<td>1975</td>
<td>Census (15)</td>
<td>138,625</td>
<td>23,578</td>
<td>5.9</td>
</tr>
<tr>
<td>1979</td>
<td>U.D.P.</td>
<td>177,395</td>
<td>30,067</td>
<td>5.9</td>
</tr>
<tr>
<td>1980</td>
<td>U.D.P.</td>
<td>188,511</td>
<td>31,951</td>
<td>5.9</td>
</tr>
</tbody>
</table>

*housholds

The census taken in 1975 recorded a population of 134,588 inhabitants, within the zone defined above. A comparison with the figure given above indicates a growth rate of 13 to 14 percent, but it is difficult to compare a census and a sample survey. After adjustment, the results of the census indicated a total population of 138,625.

At the same time, the population figures for the largest villages immediately outside the city were 4,139 inhabitants for al-Rawdah and 1,312 inhabitants for Haddah. Approximately ten villages within a radius of 30 kilometres of the city recorded between 1,000 and 2,000 inhabitants.

Because of the rapid rate of growth, the population of Sana'a, by 1980 a new estimate of the city's population was required. This estimate was made by counting the buildings in each sector and comparing the results. The work was carried out by using aerial photographs dating from 1979 and maps at scales of 1:5,000 and 1:2,000 made on the basis of these photographs. On-site inspections made it possible to determine what changes had taken place during the previous two years.

It was assumed that the built-up part of the old city had not changed, which was confirmed by the study conducted in 1978 by Shankland Cox Partnership for UNESCO, and that the average number of inhabitants per building remained constant.

The growth rate of the population between 1975 and 1979 was found to be 6.3 percent per year. There was also probably an increase in the number of inhabitants per building in the oldest quarters, but this is difficult to measure. There is no reason to assume an increase in occupancy rate in the newer structures, because for the most part they represent new construction built by the occupants themselves.

The population of Sana'a was therefore estimated to be 190,000 inhabitants in early 1980, or approximately 200,000 inhabitants for the entire urban area if one takes into account the villages located immediately outside the city (al-Rawdah, al-Jiraf, Haddah, etc.), which will soon be incorporated into the city itself.

Although high, the growth rate of 6.3 percent was still lower than had been projected. However, between 1975 and 1979 a large number of buildings appeared that were not yet completed in 1980, which means that the built-up area grew faster than the population during this period.

On the basis of trends observed between 1975 and 1980, it can be assumed that the population will continue to grow at the same rate over the short term, which would result in a population of 270,000 for the urban area by 1985. But on-site inspections made in December 1980 tend to indicate a slow-down in construction in the outlying quarters. It is still too early to decide whether this represents a real change in the trend or is simply a brief aberration.

In view of the inherent uncertainty in population growth parameters, long-term population projections are very tenuous. Simply extrapolating with a growth rate of 6 percent per year, would yield a population of the order of 650,000 by the year 2000, or a population three times the size of the present population. This is, of course, only an order of magnitude since migration, which plays an important role in the growth of the city, can undergo significant fluctuations.

An analysis of the population density of the various census sectors shows that it can go as high as 600 inhabitants per hectare in the old city. The average for the area located to the east of Wadi Sairah is close to 400 inhabitants per hectare, but this area is devoted almost exclusively to housing and has very few roads. An analysis based upon large sectors including public facilities, business and industry, and empty areas is more indicative of actual land occupancy.

In 1975, when the city was still developing beyond the inner core in a relatively uniform manner, the average population density figures ranged from 70 to 130 inhabitants per hectare in the newly developed areas depending upon the degree of continuity of the newly developed areas and non-residential land uses.

Housing Types in Sana'a

In general, the following types of housing are found in Sana'a:

1. traditional housing of the old city and the Jewish quarter, which are multiple-storey buildings of brick or stone construction;
2. traditional houses with gardens built in the central area before the revolution;
3. traditional houses without gardens built in the central area near the old quarters or along the main arteries of the central area before the revolution;
4. recent single-family houses, most often with gardens;
5. traditional houses without gardens built after the revolution;
6. recent buildings intended for mixed occupancy in the center of the city;
7. planned housing projects (Madinat al-Handi, al-Duhaiz, etc.); and
8. shanty towns (Akhdam).
The last two categories are very recent and not very widespread. Categories (4) and (5) account for most of the construction in the extensions out from the central core.

Except for the planned housing projects representing about 5,000 housing units, the impact of which will only be felt in the years to come, housing construction has traditionally been left to private initiative. Private housing production covers a wide range of types, from multiple-storey stone buildings to one-room concrete block houses; but the nature of production is roughly identical.

Between 1975 and 1980 approximately 1,500 housing units per year were built by private initiative. In actual fact, however, it seems that the number of housing starts was much higher because almost 4,500 buildings that were either under construction or had their foundations in place were counted in 1979.

This phenomenon has to be understood in the economic context of the time. Funds transferred from abroad by expatriate workers had tripled. Transferred funds generally stimulate housing construction, which is spread over a varying number of years depending on available means. Moreover, purchasing a lot and then construction materials is the most popular type of investment and savings. But this system, which worked acceptably in the past, seems to have reached its limit because of the lack of available land, the scarcity of labour, and the stagnation in transfers of funds from abroad since 1978.

1) The Ministry of Municipalities and Housing is responsible for environmental health (solid waste removal, food hygiene, pest control, public toilets), municipal parks, municipal councils, low-income housing, physical planning (implementation of the five-year master plan as it relates to urban density and street patterns), building permits, and budget approval, staffing and funding for all these activities.

2) The Ministry of Public Works is responsible for land registration and the construction of public buildings.

3) The Ministry of Health is in charge of hospitals, disease control, health centres and nursing clinics.

4) The Ministry of Education is responsible for the operation of all primary and secondary schools, and adult literacy centres.

5) The Ministry of Interior is in charge of police services, traffic control, vehicle registration, driver licensing, investigation of traffic accidents, fire protection.

6) The Highway Authority is responsible for the construction of paved urban roads and inter-city roads.

7) The National Water and Sewerage Authority operates and maintains the water supply system and sewerage facilities.

8) Yemen General Electric Corporation is responsible for power supply and distribution.

9) Yemen Transport Company operates public transport.

The above agencies all provide urban services. No formal structure for coordinating their activities at the municipal level existed at the start of the Urban Development Project. This role devolved upon the Ministry of Municipalities and Housing, which in fact has played the role of development entrepreneur, procuring, organizing and coordinating the resources necessary to implement the project.

In 1980 municipal revenues in Yemen accounted for one percent of the total...
municipal expenditures, the difference being paid from the national treasury. Consequently, and especially since it was a pilot project, the Sana’a’s sites-and-services scheme was designed to be self-financing, that is, the costs of development would be tailored to, and ultimately borne by, the future residents (“beneficiaries” in World Bank terminology).

Partial financing of house constructions in the form of loans for building materials was incorporated into the institutional setup in coordination with the Housing Credit Bank, a financial institution recently established in Yemen.

In 1976 the Yemeni government passed a land registry law, providing for centralisation of land registry with provision for establishing proof of title. The implementation of this law was delegated to the Ministry of Public Works. The consultants prepared a pilot land registry project to be applied in Sawad Sawan, based upon the Torrens Title System.

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**Site Plan for the Sana’a Project**

Ten sites in Sana’a were identified by the government ((that is, by the Ministry of Finance or the Ministry of Municipalities and Housing) as potential development locations. These were reduced to four likely possibilities by the comparative application of the basic criteria of 1) cost of acquisition, 2) proximity to sources of employment, and 3) off-site infrastructure (e.g., roads, water and electricity).

Of the four priority sites, one was rejected due to soil structure (solid rock). Of the three remaining sites, the government selected one without further examination due to its apparent ease of acquisition. While this site was initially thought to comprise an area of one hundred hectares, preliminary acquisition steps made it appear that the site would be limited to ten hectares. Both the World Bank team and the consultants urged the government to increase the size of the site to at least forty-five hectares.

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*The housing was designed and built by the Chinese as walled compounds.*

*Photo: W.L. Porter.*
Subsequent investigation by the consultants has revealed that a proposed major urban road (the northeast boulevard) would, if approved, bisect the chosen site. The topography of this site is such that its bisection by the road would make the area unsuitable for a site-and-services development. Consequently, the consultants have recommended strongly that the site immediately to the south of the proposed road be considered as an alternative. The alternative is one of the three sites initially identified as being most desirable for development.

Once the site was selected, the acquisition procedure was complicated and extended, which illustrates the need for a land registry system as well as legislation concerning expropriation. The current acquisition procedure apparently is as follows: officials of the Land Registry Department and Ministry of Finance, accompanied by special counsellors who are knowledgeable about traditional ownership in the area to be inspected, make a visual inspection of the site and establish approximate site boundaries based upon natural features. The site is subsequently demarcated by a physical boundary (a trench dug around the perimeter of the site). The boundary demarcation precipitates the presence of the heretofore unidentified private owners at the Ministry of Finance. A process of negotiation between private claimants and the Ministry of Finance presumably terminates in the compensation of valid claimants at the estimated market value of the land.

Development of the Sana’a site plan took place over a period of one year with four major revisions before a plan emerged that met both the criteria of the World Bank and the planning features required by the Ministry of Municipalities and Housing.

The World Bank criteria required:
• three sizes of housing plots — 72, 80, and 96 sq. m. each;
• strict association between the sizes of plots and the level of access, such that the smallest plots would be served by pedestrian walkways, the intermediate plots by service roads, and the largest plots by primary roads;
• the total surface area of saleable housing plots comprising 60 — 65 percent of the total site area;
• roads, pedestrian ways and parking areas restricted to 25 percent of the total site area;
• community space limited to 10 percent and open space to 5 percent.

The objectives of the Bank were to achieve affordable costs. The objective of the client was to achieve the highest standard of quality.

The site that was finally selected was a fortunate choice. Consisting of a long platform sloping towards the Sana’a valley, substantial economies were obtained in the drainage and sewerage network. This resulted in cost savings that enabled the construction of an additional one hundred demonstration houses within the total project budget.

All housing plots are oriented either south or northwest, so that houses may be heated by direct solar radiation. Solar energy is the principal source of heating in Sana’a, where daily temperatures can vary as much as 20º Celsius between noon and midnight.

The 26 hectare site incorporates the principal elements of a self-contained neighbourhood, including a central mosque, central market, social service facilities, two school sites, and areas for small local businesses on plots bordering primary roads. The site may be expanded in the future by extension of modular neighbourhood units, modified as necessary by the configuration of the site boundaries.

The level of infrastructure provided for, within the limits of affordability, includes:
• water service to every plot;
• sewerage connections to every plot;
• electrical connections to each house with an average connected load of 1.6 kwh;
• macadamised primary roads; and
• secondary roads of compacted gravel.

The project includes 120 demonstration houses. The objective of these houses is to demonstrate the application of the lowest cost local construction techniques available in the capital. The houses are to be capable of expansion in several stages, replicating an established and widespread practice.

It may have been more economical to build the houses on a group basis, rather than as individual units. But the project is designed to accommodate construction by individual owners, each building at a rate determined by the owner’s personal financial capabilities. The most predictable form of expansion is addition to core units, one room at a time.

Frequently, during the course of project design, Yemeni planners raised this question: Why not build apartments and economise on the construction costs? The reason is that this form of construction requires relatively large-scale capitalisation, beyond the range of financial resources available and exceeding the affordability for the target group.

The project design was based upon the following criteria:
• orientation for solar heating;
• the provision of an expandable core consisting of two rooms and a sanitary block;
• the potential for expansion, one room at a time, with vertical expansion of an additional two storeys;
• the employment of the lowest cost construction methods and materials having the desired structural properties;
• space organisation suited to the established living pattern in Yemen; and
• incorporation of traditional, arched windows with the capability of incorporation of famarias according to individual priorities.

The analysis of costs, construction techniques in practice, and the availability of materials resulted in the choice of:
• stone foundations;
• high density, split-face concrete block walls;
• small span reinforced concrete slab floors;
• precast concrete window arches;
• traditional mud roofs on completed parts of houses; and
Technology Transfer: Myths and Realities

Contracts for feasibility studies and engineering services between expatriate engineering firms and governments of developing countries frequently provide for the training of local counterparts by the consultants during the performance of the contracted services. This provision, made in the interest of technology transfer, is in fact a contradiction between performance and education. Since consultants are obliged to perform specific tasks within a limited period of time and according to a definite schedule, they apply all of their effort and resources to performance. The broader goals and slower pace of the educational process are incompatible with those of the efficient performance of engineering and planning contracts.

Furthermore, the local personnel designated to work with expatriate firms are usually government employees, and this relationship places them in the contradictory roles of student and teacher at the same time; supposedly learning from the consultant while being obliged to advise government officials on the evaluation of the consultant’s performance.

The question of technology transfer is more complicated than the question of training of counterparts because of the fundamental conflict between traditional and technological societies. Technology has no national, cultural, or religious tradition. It is a form of non-political totalitarianism that operates according to unwritten, implicit impulses. Technological societies have abandoned religion, ethics, tradition and cultural continuity for the pursuit of development. The religion of technological societies are anachronisms having a purely ritualistic and non-functional role. The technological society has a non-sectarian social ethic, a mass phenomenon that continually changes character without reference to established institutions.

Traditional societies, in particular Islamic societies, in contrast to technological societies, tend to practise traditional religion and strive to integrate a fundamentally religious ethic into the political, technical and administrative processes of development. In short, technology is a challenge to the Islamic world, a challenge that presents a conflict of value systems in every exchange.

At the conclusion of a research paper on land tenure and land legislation in Yemen, the institutional expert for the Sana’a project made this astonishing observation: “In the Yemen Arab Republic many of the values widely held are deeply rooted in religious origins. These values have been maintained and sustained through effective religious education and legal precedent. The economic content of Islamic social policy is clearly defined. It stresses:
- maximum of production and efficiency;
- wide distribution of wealth;
- earning of additional income only through work; and
- security for the underprivileged.

“The westernisation process, at least with regard to technology, may well have an impact on traditional values, but any recommendations regarding land tenure, mortgage credit and municipal administration and finance must be consistent with the values held by the people.”

These values were manifested throughout the studies of the Urban Development Project by the government officials responsible for its supervision and evaluation. They consistently fought for:
- low interest rates for homeowners;
- a higher level of infrastructure than the bare logic of cost recovery could justify;
- high quality construction;
- larger houses; and
- site planning conducive to establish living patterns.

The technologists prevailed on all counts except the site plan.

The Islamic values as applied to this project succumbed to the built-in criteria for a technological process. But the impetus for quality arising from the Islamic ethic may have pushed the project to the qualitative limit within the imposed technological restraints. The maximisation of qualitative achievement may be the most important role of Islamic values in development.

Technology Transfer in Urban Development

Contracts between consulting firms and governments of developing countries almost invariably specify the training of counterparts by the consultants. The counterparts are usually civil servants.

The conditions under which consultants perform their contracts are not conducive to counterpart training. Consultants are required to perform specific tasks within a schedule of deadlines for a fixed price. Their resources are divided between the field and headquarters, and they devote all of their efforts to performance. Training is incidental and the only educational experience of the counterpart is one of observation of operations in which he is not a functioning participant.

In short, counterpart training is an inadequate form of education. This situation is only a manifestation of a deeper problem, a symptom and not a cause. The question of technology transfer is related to the larger issue of modernism and tradition.

In Islamic countries the issue of modernism and tradition in urban development is joined in two phenomena: urbanisation and the introduction of modern technology. The polarity of modernism and tradition can be equated to that of Islam and technology. In the case of urban development in Islamic societies, modernism in the form of technology is being exported to and imported into traditional societies.
A similar situation occurred, in reverse, during the Gothic period in Europe, in the twelfth century. The established social order, dominated by ecclesiastical theology, philosophy, administration and finance came face to face with nascent technology in the form of empirical rationalism (building technology is exemplified by architects). This phenomenon was examined in detail by Erwin Panofsky in *Gothic Architecture and Scholasticism* (New York: Vantage, 1964). He described the saga as a conflict of faith and reason, a concept that is equitable to modernism and tradition.

A similar situation is occurring today, whereby Islamic societies are adopting modern technology. Modern technology is a phenomenon of technological societies. If one can believe the French philosopher Jacques Ellul (whose *The Technological Society*, New York: Knopf, 1964, was commissioned by the Fund for the Republic, an American Foundation), technology itself is the new religion of the eastern and westernised worlds. Technological societies have effectively abandoned traditional religion and its corollary, social ethic, in the systematic pursuit of materialism. Technological societies operate on a non-religious, non-sectarian negative social ethic, which may be defined as a form of tension between predatory mechanisms of technology (exemplified by monetarism) and regulatory institutions (law, judiciary and police). The latent conflict between Islam and technology is the conflict of the value systems of technological and Islamic societies.

Islamic societies, in their present state, tend to practice a social ethic that is based on religious belief. A constructive union of Islam and technology is possible if technological resources can be made to conform to the Islamic social ethic.

Are the objective systems of technology susceptible to the incorporation of a social ethic other than that which has evolved with the technological society? After a brief examination of this question in relation to urbanism, architecture and the built environment, the significant aspects of technology that are susceptible to domination by a new social ethic seen to be finance, design, and education.

**Finance**

Technological finance is purely functional, except in the case of defense; Islamic finance is socially oriented. In housing, technological finance means market interest rates; Islamic finance means low interest rates. The low interest rate is a form of distribution of wealth intended to provide better conditions for the homeowner.

In the case of the Sana’a urban development project, a loan to the government was made at the interest rate of 3/4 of 1 percent. The loaning institution imposed the rate of 12 percent interest on the project beneficiaries. The government, by the terms of the loan, was required to charge 12 percent interest on loans to future homeowners.

**Design**

Technological design is based on a process of quantification. Only the quantifiable enters into the production of object systems.

The architectural designer in the technological society manipulates the technical process to achieve a personal aesthetic expression. This quest is limited by the technical options within financial limitations.

The result is a profusion of styles that the technological society has produced. Neo-Gothic, Greek revival, Baroque revival, functionalism, pop art in architecture, and now post-modernism. This is a rampant form of the negative social ethic. The pre-
The Sana'a Urban Development Project

House design for Yemen based on a traditional style.
Source: BCEOM.

datory mechanism is the quest for self-expression. The regulatory mechanisms are building codes, performance standards, zoning codes and budgets.

Islamic values will materialize in a technological world to the extent that they can be quantified, provided that Islamic finance does not conform to its counterpart financial practices.

Education

In this context I mean specifically the education of the designer. Design is a process transforming abstractions into objective systems through intermediaries by quantification and description.

Theoretically, this concept of design would admit the incorporation of any quantifiable aspect of any society, but designers in the technological society are not educated in design. Architectural schools are limited to

The initiates are moulded to conform to an existing model. The existing model is a successful practitioner. A successful practitioner in education is a practising designer with a substantial lineal footage of print and substantial square metres of photography in publication.

Islamic societies, if they are to achieve Islamic values in design, have a major role to play in the education of designers.

*The planning studies represented in this paper were conducted by the Bureau Central d'Études pour les Équipements d'Outre-Mer (BCEOM). The commentary, starting with the heading “Technology Transfer: Myths and Realities", are the personal views of the author and not those of BCEOM.
A Construction Industry in Transition

B. V. Kulkarni

The Yemeni Heritage

Unlike many other countries in the region, the Yemen Arab Republic has a unique heritage of buildings, urban centres and civil constructions. Its traditions of construction were built up through centuries. Archaeological remains dotted over the countryside testify to its glory, and many buildings and urban centres still functioning today affirm its vitality. The style of construction is so unique and authentic that surviving examples, some of them breathtaking, evidence the heights reached by Yemeni builders. Their genius was not cramped to create a string of monotonous structures. In different regions of environment and with differing building materials, they devised masterly styles and technologies of construction.

In the past the construction industry grouped its basic components and functioned like a craft-oriented activity to satisfy the needs of the community. Rich traders and powerful tribal leaders were patrons of construction. Affluence in trade and commerce brought into existence buildings and urban centres that fostered the crafts and intellectual pursuits, and agriculture provided the basis of stability. Anonymous master builders and workers formed an integral part of the community. They utilised only locally available building materials to fuse form and function in their creations. Theirs was an elementary but effective organisation for construction.

The compelling merits of this model of the construction industry, which survived with almost no change over centuries, were many. Foremost was the application of technology utilising only those materials that were available and could be transported easily to the site. Designs were such as to meet the needs of the environment, never to violate it. Except along the stretch of the Red Sea that was exposed to trade routes, tradition was not under the influence of style or fashion.

Civil constructions included dams and intricate systems of irrigation canals such as at Ma’rib; trade routes and daring bridges such as those on the Shaharah road; fortifications such as those on the way to Ta‘iz; agricultural land terracing to utilise every drop of rainfall without land erosion; city walls, gates, and defence fortifications; and wayside structures to water conserving pools. Public buildings, utilities, and communal facilities; individual residential buildings; and large urban centres all still function in keeping with the traditional mode of community life. They are the living remains of that industry.

It is not possible to document in one place all the achievements and history of construction in this country. A few examples are appended to this paper to illustrate the virtuosity of Yemeni buildings and a brief bibliography is given. Research on building in Yemen has gained momentum in the past few years. Today experts and travelers are exploring, writing, and illustrating one aspect or another of the heritage of this long-isolated country, which finally opened its doors to the work after undergoing a revolution in 1962.
Period of Transition

The political revolution of 1962 was a turning point for the country, especially in its interior highlands. Nearly eight years of internal strife and dissension followed before the YAR set its course of development. From 1973, the process of building a nation was begun with a three-year plan, the first attempt of its kind to consolidate the gains of the revolution. The second effort, a five-year plan, was a vastly improved performance aimed at co-ordinated progress in different sectors of the economy.

Faced with the tremendous task of nation-building, the new government invited many national and international organisations and humanitarian agencies to assist in its socio-economic development. Funds and expert assistance poured into the country during the transitional period from 1973 to 1981. With the old institutional framework, only a modicum of administrative culture, and almost no technical and managerial cadres, it was impossible for the new government to control and channel this sudden influx of developmental assistance. The Ministry of Public Works, which should have looked after the smooth transition of the construction industry, was no exception to this general situation within the government.

The limitations of the Ministry of Public Works and the concern of other new ministries and authorities to provide infrastructure and rapidly achieve physical goals created a "free for all" situation. Every department of the government involved itself in the construction industry. They started choosing their own consultants, supervising procedures for the tender of large projects, awarding works, and generally mismanaging. Under the pressures of expanding assistance and credits, they lost sight of the need for coordination of efforts. Amateur management thus had a field day in the transition period.

Recognising the weakness of institutions, bilateral agencies pushed ahead with development, allowing for minimal government involvement in the process. They functioned almost like para-government departments.

In keeping with Yemen's long tradition of self-help and co-operation in community development, local development agencies came into their own tempo during this period and, receiving encouragement from the government, went ahead with their own programmes. In the governorates and districts they did commendable work at the grassroots level to provide roads, schools, clinics, and irrigation and water supply schemes in the interior. But, obviously, this can no longer continue. Local development associations can no longer function without proper technical and institutional guidance and help.

Thus, both in the public and private sectors, the construction industry was thrown out of gear. Different ministries of the
government competed inefficiently for control of the industry. At one point, for example, the Ministry of Economy concerned itself with brick-manufacturing projects while the Ministry of Petroleum and Mineral Resources tackled stone-cutting projects. Such confusion will continue until the government decides to strengthen the Ministry of Public Works, which is the only legitimate wing of the government to deal with the industry, to take control of the construction sector in all its aspects. The industry is now taking a new shape, and this is the time to mould it.

The Emerging Model of the Construction Industry

Two conceptual models of the construction industry are juxtaposed in Figure 1: one pre-1962 and the other as it is now emerging. These models are over-simplified for quick appraisal of an otherwise complex process. Comparison of the two will help us to visualise the structural changes that are taking place and the stresses that are generated in the process. The construction industry has many interfaces with other sectors of national development; it interacts to modify, and in turn, to be modified by, these sectors.

The first departure to be noted is the very nature and volume of demand for construction. In the past, emphasis was first and foremost on the fortified security of the community. Within the confines of city walls, individuals lived, worked, and prospered, generation after generation, in a set social mode. Their aspirations varied little. Their pace of work depended upon the affluence and power in the region, which very often shifted its base. The construc-
A Construction Industry in Transition

The construction industry flourished as a craft, and demand was adjusted according to its capacity to produce and the natural resources available. Except in matters of defence, the time span for the completion of facilities was not rigidly set.

As development experts know well, the steps to be taken in planning are, first, to determine the facilities desired by a community or nation in a given period of time, then to grade them according to the priorities set by consensus within a government, then to mobilise the resources for their realisation, then to set physical targets for achieve, and finally, to press on and push for the achievement of these goals. This process of planned development puts tremendous pressures on natural resources, man-power and institutions. Above all, it requires self-discipline and patience for co-ordinated results to emerge. But unless you aim high, planners believe, you don’t shoot your target.

Table 1 shows the pace set in the transitional period under discussion. The outlay on construction in 1977 was proposed to be YR 586 million, not including housing. It is expected to be YR 1,666 million in 1990. If the housing projects are considered, these figures swell. Tables 2 to 4 indicate the importance of the construction sector in national development efforts. In absolute terms, the figures may not appear very impressive; but, considering pre-1962 developments, this is a very ambitious pace for achievement. It set in motion all other parts of the industry and created a fast-moving economy and employment.

The impact of planned development in Yemen was felt in the building materials sector of the construction industry. In 1973 the rate at which materials were quarried by private owners was inadequate to meet the demand for construction. By 1976 all that increased were the prices of these materials. Quality deteriorated. The demand for new materials shot up, and each consultant specified only the products with which he was familiar. This generated a scramble for imports. The growth of imports in the transport sector out-num-

Private residence, Sana’a. Richly ornamented facades, such as these, are typical for wealthy households in Sana’a.

Photo: C. Little/Aga Khan Awards.

Berced everything because the goods had to be moved around. A variety of new equipment came into the country.

The co-ordination of import policies required for the construction industry was lost in the din. Whatever material was unloaded at the port was used up. New items appeared on the market frequently and disappeared rapidly. It was difficult to specify construction products and then receive them in sufficient quantity, unless one took to importing materials for the project on a priority basis.

Following the import of new materials came the introduction of new techniques of construction, new equipment, and new skills from outside the country. A new breed of technicians and workers flowed into Yemen, while local traditions were pushed into the background. The traditional Yemeni knowledge, experience, and insight regarding local materials started to disappear quickly. The construction

Yemeni stone cutter.

Photo: S. Özkan.
Table 1 Forecast of Construction Demand 1977-90

<table>
<thead>
<tr>
<th>Year</th>
<th>Housing</th>
<th>Construction other than housing</th>
<th>Subtotal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Offices</td>
<td>Education</td>
<td>Industry</td>
<td>Health</td>
</tr>
<tr>
<td>1977-78</td>
<td>716</td>
<td>164</td>
<td>94</td>
<td>82</td>
</tr>
<tr>
<td>1978-79</td>
<td>795</td>
<td>182</td>
<td>104</td>
<td>91</td>
</tr>
<tr>
<td>1979-80</td>
<td>882</td>
<td>203</td>
<td>115</td>
<td>101</td>
</tr>
<tr>
<td>1980 (6 months)</td>
<td>465</td>
<td>110</td>
<td>59</td>
<td>51</td>
</tr>
<tr>
<td>1981</td>
<td>1033</td>
<td>244</td>
<td>131</td>
<td>113</td>
</tr>
<tr>
<td>1982</td>
<td>1147</td>
<td>271</td>
<td>146</td>
<td>125</td>
</tr>
<tr>
<td>1983</td>
<td>1273</td>
<td>301</td>
<td>162</td>
<td>139</td>
</tr>
<tr>
<td>1984</td>
<td>1413</td>
<td>334</td>
<td>180</td>
<td>154</td>
</tr>
<tr>
<td>1985</td>
<td>1569</td>
<td>370</td>
<td>200</td>
<td>171</td>
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<tr>
<td>1986</td>
<td>1741</td>
<td>410</td>
<td>222</td>
<td>190</td>
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<tr>
<td>1987</td>
<td>1810</td>
<td>428</td>
<td>230</td>
<td>197</td>
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<td>1988</td>
<td>1883</td>
<td>446</td>
<td>239</td>
<td>205</td>
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<tr>
<td>1989</td>
<td>1958</td>
<td>464</td>
<td>249</td>
<td>213</td>
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<tr>
<td>1990</td>
<td>2036</td>
<td>482</td>
<td>259</td>
<td>222</td>
</tr>
</tbody>
</table>


Table 2 Expected Share of Construction in Gross Fixed Capital Formation

<table>
<thead>
<tr>
<th>Sector</th>
<th>Engineering YR (million)</th>
<th>% share</th>
<th>Buildings YR (million)</th>
<th>% share</th>
<th>Total Construction YR (million)</th>
<th>% share</th>
<th>YR (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>1255</td>
<td>55</td>
<td>57</td>
<td>3</td>
<td>1312</td>
<td>58</td>
<td>2276</td>
</tr>
<tr>
<td>Industry</td>
<td>413</td>
<td>12</td>
<td>815</td>
<td>23</td>
<td>1228</td>
<td>35</td>
<td>3545</td>
</tr>
<tr>
<td>Construction</td>
<td>15</td>
<td>3</td>
<td>3</td>
<td>15</td>
<td>3</td>
<td>3</td>
<td>451</td>
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<tr>
<td>Commerce</td>
<td>379</td>
<td>60</td>
<td>379</td>
<td>60</td>
<td>4925</td>
<td>90</td>
<td>6280</td>
</tr>
<tr>
<td>Transport &amp; Communication</td>
<td>4440</td>
<td>89</td>
<td>10</td>
<td>1</td>
<td>4450</td>
<td>90</td>
<td>4925</td>
</tr>
<tr>
<td>Finance</td>
<td>15</td>
<td>16</td>
<td>15</td>
<td>16</td>
<td>4925</td>
<td>90</td>
<td>6280</td>
</tr>
<tr>
<td>Housing</td>
<td>2085</td>
<td>100</td>
<td>2085</td>
<td>100</td>
<td>2090</td>
<td>100</td>
<td>2090</td>
</tr>
<tr>
<td>Services</td>
<td>50</td>
<td>3</td>
<td>1247</td>
<td>64</td>
<td>1297</td>
<td>67</td>
<td>1993</td>
</tr>
</tbody>
</table>

Total: 6158 38.6 4623 28.9 10781 67.5 15971

The industry lost its character as a craft-based industry.

The government, with the help of the World Bank and UNIDO, has searched for the ways and means to upgrade the local building materials industry and to discover local alternatives. (Their reports and recommendations are listed in the bibliography.) Since 1979, these agencies have made efforts to draw the serious attention of the government to this aspect of the industry. UNDP and UNCHS have extended institutional support to the Ministry of Public Works, the primary agency concerned with the construction industry. However, implementation efforts have not yet succeeded. Bilateral agencies have taken up vocational training schools and other training activities; but their impact on the total industry has yet to be felt. Preparing the base of manpower in the industry, and setting up institutions to serve it, are tasks that are going to take time.

Construction booms began in the neighbouring Gulf countries in the 1960s and attracted skilled labour from all over the region, including Yemen. In 1975 about 280,000 Yemenis were working outside the country, remitting some 375 million U.S. dollars annually. In 1979 this remittance rose to 1.5 billion U.S. dollars. The national exchequer gained much-needed foreign exchange for development, but the nation lost its pool of skilled workers and human resources. This introduced a paradoxical situation in which Yemeni workers found outside employment more profitable, while many foreigners found Yemen a more hospitable country in which to work.

Future trends in labour migration are difficult to predict, but the current trends in neighbouring countries may spell the end of construction booms in the region and compel many expatriates to return to their own soil. Those who return will bring with them valuable experience. Perhaps, as a result, the construction industry in Yemen will start with a higher bench mark.

In the period of transition in Yemen, the education and training of technicians could never catch up with demand. Formal as well as technical education suffered, not for want of a student body but because of the shortage of trained teachers and educational administrators. Many students who went out of the country and returned with degrees but had practically no experience, occupied managerial and administrative positions and contributed little to their professional field. Until now there has been hardly a professional body on which the industry may rely; the Association of Engineers, for example, was not formed until 1980.

The government has taken steps to improve the situation. Vocational training institutes, started with bilateral aid, expect to train over 400 technicians annually, though that number will hardly fill the requirements of an expanding sector. While on-the-job training efforts cannot be readily assessed, there appears to be little on-the-job transfer of skills, and what little exists is not systematic. Foreign consultants and contractors who came for work in the country on a project-by-project basis are not motivated or equipped to transfer their technology or skills to local engineers and technicians. Controversy often surfaces over the utility of Yemeni counterparts in a project.

To keep to schedules of construction, foreign contractors brought in a large amount of equipment and machinery. Upon completion of projects, many of these items were left behind. Local contractors also acquired construction equipment and plants on their own, but they did not have the managerial capability to fully utilise the machines. To add to this difficulty, maintenance and repair facilities in the country were woefully inadequate, and spare back-ups could never be satisfactory because of the diversity of equipment in the country. The speed with which the construction industry will now take off depends much on the action that the government will take to hire management and to establish a construction equipment pool with good facilities for back-up.

Like other modern industries, the new model of the construction industry in Yemen will depend upon managerial cadres for obtaining optimal turnover from input. This discipline has not yet had any impact, but the younger generation of contractors is showing keen interest in learning the skills for greater profits.

The orderly functioning of the industrial

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Table 3 Annual Growth in Various Sectors 1973-76

<table>
<thead>
<tr>
<th>Sector</th>
<th>Average Annual Growth (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>5.0</td>
</tr>
<tr>
<td>Industry</td>
<td>8.6</td>
</tr>
<tr>
<td>Construction</td>
<td>5.5</td>
</tr>
<tr>
<td>Transport</td>
<td>8.0</td>
</tr>
<tr>
<td>Trade</td>
<td>10.4</td>
</tr>
<tr>
<td>Finance and Banking</td>
<td>35.4</td>
</tr>
<tr>
<td>Services</td>
<td>7.1</td>
</tr>
</tbody>
</table>


Table 4 Employment Trends 1975-85 (in thousands)

<table>
<thead>
<tr>
<th>Year</th>
<th>Construction</th>
<th>Total Employment</th>
<th>Construction as % of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>48.7</td>
<td>1059.9</td>
<td>4.6</td>
</tr>
<tr>
<td>1980</td>
<td>148.6</td>
<td>1331.3</td>
<td>11.2</td>
</tr>
<tr>
<td>1985</td>
<td>215.7</td>
<td>1543.6</td>
<td>14.0</td>
</tr>
</tbody>
</table>

sector in a country depends upon the general legal framework, with particular legislation to govern an industry. The legal framework is based on the *Shari'a*, which lays down principles and guidelines for business dealings but not for construction contracts and related civil transactions. Legal concepts are so basically different from those in the West that reconciliation is a difficult task. In the period of transition there was considerable confusion in this area. The multiplicity of agencies working according to their own conditions of contract, and the differing languages in which contracts were written, only added to the confusion.

Concepts differed on major issues such as the validity of agreements, the obligations and liabilities of two parties in a contract, the resolution of disputes, penalties and damages, the adequacies of compensation, acts of God, and force majeure. So far not a single form of contract conditions has been agreed upon. For the smoother operation of the industry, this basic need must be pragmatically fulfilled. The health and vigour with which the new model will grow depends upon a clearly understood legal base of operations, reduction in contract risks, and effective financing within the construction industry. Simultaneously, labour laws, safety in industry, accident prevention and responsibilities, compensation, and insurance are other areas of the legal framework that need attention.

The financial procedures for sanctioning and disbursing payments for works are, at present, cumbersome. Public accountability and the budgeting system itself need to be work-oriented. This area within the government will assume importance when funds for projects become scarce.

**Symptoms of Stress**

Working in Yemen, for nearly six years during the period of transition in the construction industry, I frequently saw instances of the stresses in the changeover of the system/model. Many others who have worked here during this period undoubtedly have had similar experiences. A few are mentioned here to highlight the process of change and to show their effect upon the industry. Those who are engaged in the process will be able to weigh their importance:

- A project for mechanised rock-quarrying and stone-cutting was stalled for a long time because the end product did not bear hand tool marks or something similar in appearance.
- Plans for telecommunications training buildings received adverse reviews because traditional *gamaris* were not used in elevation and thus they had a completely modern look that was in keeping with their function.
- In a large public building complex, plans for buildings with completely modern facades were approved with a proviso that a dome on the main building should be constructed as in “Capitol Hill,” to give the composition of a classical look.
- In areas of civil contracts and agreements, concepts are at odds. For example, a contractor whose workmen were negligent and cast basement columns out of plumb was put in jail.
- In one contractor’s analysis of project costs, charges for insurance against workers’ compensation, damage to materials, etc., were considered to be unfair in principle.
- Lease agreements for accommodation proved to be inconvenient to a lessor halfway through the period of lease. He rescinded them unilaterally.
- A contractor was held responsible for defects that were noticed after five years of completion and were beyond doubt due to faulty structural designs supplied to him by the owner. The designs were drawn by an anonymous, unqualified engineer.
- To demonstrate against an alleged injustice and seek the mediation of a minister, a few villagers brought a calf and butchered it in front of his office one day early in the morning.
- A bilateral agency working almost on its own constructed a hospital complex providing staff quarters in duplex flats of prefabricated construction, a disco-video hall, and a swimming pool with an outdoor barbecue facility.
- Municipal by-laws do not seem to override the right to property. A person often insists on covering his entire lot, without leaving off-ssets, and insists on constructing a high compound wall, creating a blind corner at the road junction.
- Conditions of contract entered into by one wing of government authority were not honoured by another.
- In one case of fraud a sizeable amount was recovered from the bank accounts of an employee. Part of the recovered amount was disbursed by an official of the authority as rewards for information.

**Institutional Stress Points**

Once again, reference to Figure 1 will reveal the areas where change in the model is occurring. The legal framework, the laws of contracts and agreements for works, and public accountability are the means to make the industry move in a more certain framework. Once this area is cleared prag-
matically, others can be tackled. Local construction industry representatives, professional bodies, and foreign consultants with experience working in the country should be called upon to suggest a progressive base for the industry.

The local building materials industry needs revival. Manufacturing should be taken into the joint sector, if necessary, to ensure co-ordinated growth. This will not be an easy task; compensation for land and quarries, and their takeover, are going to be problems that will at times necessitate law and order situations.

The part of the building materials industry that is engaged in import needs better support, with forecasts and finances for maintaining a steady stream of useful materials both for the public and private sectors of industry. A joint-sector organisation will be needed as an equipment pool to provide the rental of construction equipment, transportation of materials to sites, and facilities for maintenance workshops. Government departments, as well as contractors, need to be trained in construction management techniques in order to obtain better results.

The most explosive issue of all is going to be over the labour sector. With the influx of Yemenis returning from neighbouring countries, the enforcement of labour laws, keeping up productivity, and ensuring payments will present problems not faced thus far. Foreign contractors will prefer to take up equipment-intensive works; only the Chinese will continue to work with their own labour. Either way, the transfer of skills or technology to Yemeni counterparts is going to be a tardy process.

The desire to preserve traditional forms of construction will be recurrent. Unless this desire is channelled with real understanding, "old appliqués" will be the result. In-depth study is needed to delineate what constitutes the essence of the tradition and how far it can be used in new works. As long as people preserve their old social ways and culture and the majority feels at home in the old-style environment, it will be wise to give safe outlet to their creati-
vity. Since Yemen still lives in its villages, its urban centres and structures should not be radically divorced from the village.

New Directions

What shape and direction will the construction industry in Yemen take? The answer can be reasonably predicted against a perspective of regional trends, modified by the factors peculiar to Yemen.

Development activities that were financed and implemented bilaterally will slow down considerably. With the recession in the construction industry in neighbouring countries, Yemeni labour may return home. This would have the effect of reducing remittances while at the same time swelling the ranks of technical manpower within the country.

The national economy will readjust itself to accommodate these factors. Funds borrowed from international agencies will be spent on specific projects. The share of the local construction industry in such works will be limited to the local building materials sector. The rate of growth of the industry will level off, so that it will hardly cover the urban growth projects in the public as well as private sectors.

The local construction will have to look to co-operative development for business; indeed, self-help and co-operation always have been Yemeni characteristics. The industry will also have to find ways and means of tempering the inclination towards uncritical acceptance of western models. It remains for us to determine the essence of tradition in Yemeni architecture and construction, how much of it can realistically be reflected in new works, and by what means. In this way the construction industry in Yemen can be made to evolve in a new direction.

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Ibrahim

Dr. Adam’s paper has two distinct parts. The first deals with the World Bank’s housing project in Yemen, which underwent several changes and modification as a result of the discussions between the Bank’s experts and their Yemeni counterparts. Dr. Adams then presents an expose of the polarity of “tradition” versus “modernity”, and he extends his analysis to the opposition between Islam and modern technology. I have the following reservations about his views:

First, he did not show a logical link between the first and second parts of his paper. We do not know the final fate of the World Bank’s housing project; nor does he demonstrate that whatever difficulty the project encountered is due to something intrinsic in Islam.

Second, I am afraid that Dr. Adams treaded on very slippery grounds when he posed Islam as an ideational vision: I must ask whose ideal vision? At present there are several such visions: The Saudi vision, for example, bears little if any resemblance to the revolutionary Iranian vision. In terms of practice, the exponent of one vision many have no objection to wholesale importation of modern technology, but they will not allow people to question, imagine or generate their own indigenous technology. Other visionaries have been talking about, and probably working on, an “Islamic nuclear bomb”. Some Islamic militant groups have taken a totally rejectionist attitude toward modern science and technology. Others (e.g., the Moslem Brotherhood in the 1940s) have adopted the opposite extreme and have made a cherished practice of training their members in the latest science and technology. One cannot talk about a monolithic Islam either on the level of vision or of practice. That would be an exercise in “metaphysicalisation”, that is, detaching living Islam from history, from its societal context, and from the world system.

What exists in practice is what we observed in Yemeni villages and towns in the last few days, and it is typical everywhere, not only in the Muslim world but all over the Third World. We observed Yemeni peasants, for example, using modern technology in everyday life: electricity, television, water pumps, machine guns. Yet they retain much of what we usually subsume under “traditionalism”. It is therefore more accurate to view “tradition” and “modernity” (or Islam and technology) not as dichotomies but as a continuum. Men and women here and elsewhere in the Third World are unbinding both packages of so-called “modernity” and “tradition” and taking from each what seems to suit them best. They are evolving their own synthesis. That synthesis may not be perfect and it is often not. It may involve tension and agonizing choices; people go through the process of making such syntheses, often unconsciously.

What we ought to be concerned about is that the people in Yemen, the Muslim World and the Third World are able to make their own synthesis. We ought to enable them to do so in a context of independent development with a minimum of alienation, and not compel them into an “either-or” situation. This, in turn, is obtained when people are truly participants, not spectators, or hapless, passive victims of a world superimposed on them from the outside.

Serageldin

As a Muslim, I must take strong exception to Mr. Adams’ presentation. I believe that first and foremost one cannot accept the total dichotomisation of technology and Islam he has presented. This is not just demeaning to Muslim culture but it also is contrary to the long historic tradition that has shown that when Muslim culture was at its greatest flowering, it produced the most advanced science and technology known in the world at that time. Therefore, whatever obstacles he perceives today and which he attributes to a western technological set of values (or non-values) in conflict with the ethical structures of Islam, are not intrinsic to the Islamic culture. This, I believe, was a less than happy choice of words. Instead of the total dichotomisation be presented, it would have been better to talk of technology as a means that is utilised differently by different cultures.

Secondly, I find it totally unacceptable to use this kind of dichotomisation to describe processes related to the Urban Development Project in Sana’a. The discussion and dialogue that took place between the World Bank personnel and the Yemeni officials in the development of this project were no different than those that take place in so many other development projects. They were all undertaken in good faith, with all participants trying to bring to bear whatever knowledge, experience and expertise they possess towards the common goal of finding an acceptable solution to the problem at hand. This is true of World Bank staff, consultants, and government personnel, both expatriate and Yemeni. In fact this project was a particularly successful one in terms of the collaboration that took place between the government and the Bank, and the results represented the fruits of joint endeavour, not a single point of view. I know I speak for a number of my Yemeni colleagues when I say this.

Third, I take exception to his discussion of the economic aspects of this project and
the general issues involved in financing such projects in Muslim societies. His comments, I fear, demonstrate an innocence of substantive knowledge of Islamic economics, or international finance or financial intermediation. Just take, for example, his statements about high interest rates being “un-Islamic” while low interest rates were “Islamic”. The categorization of usury in Islam is related to the sharing of risks and efforts, and not to the amount of the interest rate in relation to the principal of the amount involved. While this is not the place to develop this extensively, one should mention that there are many interesting and innovative means developed by contemporary Muslim financial institutions to deal with project finance through Mudaraba, Musharakah, Murabaha, and other such instrumentalties.

Arkoun

I would like to add to the objectives presented by Dr. Serageldin some critical observations from an intellectual point of view. Mr. Adams uses a very conformist framework when he sets up a dichotomy between Islamic values and knowledge. His discussion reflects a growing trend in Western societies to juxtapose the “materialist West” and its wrong technology with the “ethical and spiritual Islam”. This is an ideological position and by no means an intellectual or scientific one; it is reminiscent of the attitude among Muslim apologists.

Instead of setting one system of ideas and practices in opposition to another, it is more relevant to ask a basic but neglected question: What are the positions and the behaviours of man in confrontation with all kinds of constraining systems of rules—religious as well as scientific, technological, or philosophical? A system enforced by ruling classes generates habits, sensibility, and ways of perceiving and thinking in which all people are involved so deeply that they cannot react, criticise and discover the negative effects of such system. From this point of view, there is no difference between Muslims, Christians, Buddhists and Marxists; or between Islam, Christianity, Marxism and technology.

The important question, then, becomes: What are the political, economic and cultural conditions required to maintain a critical distance from all systems that are enforced by official power or dominant culture? For Muslims in particular, what are the conditions for critically mastering Islam as well as technology in the process of the social evolution in all dimensions: in urbanism, architecture and education; in industrialization, demography and institutions? In this way, we begin a new way of thinking about religion, science, history, politics and economy; and we come to see the necessity of re-examining all our definitions and representations about Islam or any other ideological system.

Our societies need to open new horizons of thinking on old problems and to free themselves from all the irrelevant dichotomies between faith and science, religion and secularism, tradition and modernity. Modernity has two aspects: material (daily use of all objects and machines produced by technology) and intellectual (a new look to the permanent problems of religion, power, state, society, science, economy, etc.). In the same way, tradition is the continuous historical process by which new ideas, systems, and behaviours are spread, assimilated, repeated, and socialised through time. We must pay attention to two sets of tradition in Islamic societies: living traditions before Islam and tradition specifically linked to Islamic teachings. These two sets have been interacting and interpenetrating since the rise of Islam. As I have discussed in my Lectures du Coran (1982) and L’Islam, hier, demain (2nd ed., 1982), it is not correct to generalise on Islamic tradition and modernity as opposites.

Why do Western scholars never consider each Western society under the general rubric of Christianity, or Christian tradition, or Christianity? The usual answer is that Christian teaching has separated temporal and spiritual levels since Jesus, and Islam has mixed them since the beginning. This “scientific” lieu commun shows precisely the apologetic approach to Islam by Western scholars, even when they are not believing Christians themselves. They compare Christianity and Islam as two hypostases defined and used by theologians, and they ignore the concrete history of individual societies in both cases. In the West, Christianity controlled the state until the French Revolution, and it continues to do so in many countries. On the contrary, since the Umayyid period (661-750), the state has controlled and used religion, but Islam, too, exercised a discontinuous and variable influence on the state through the ulama. Western Islamologists look to the Shari’a as a system of rules built by the ulama; but they do not pay attention to the sociology of Shari’a, to the way its rules were enforced among various social groups throughout history. For example, in Kabylie (a part of Algeria) Islamic Law was never enforced until 1982. Architects, planners, and experts working in Islamic countries must devote more time to studying these societies with the same intellectual modern look they have for their own societies.
Mumtaz

I have a vision of Islam. I accept it is only one of several possible visions, but I am going to rise to the defence of Islam as I understand it.

At the end of his paper Mr. Adams referred to a conflict between faith and reason, equating it to the conflict between tradition and modernity. I submit that the conflict is not between faith and reason but between faith and faith. On the one hand, faith in the limited reality as perceived by reason and our sense perceptions and, on the other hand, faith in a larger reality that exists beyond the physical reality perceived by our senses.

Mr. Adams referred to a new religion of technology. I submit that the religion he refers to is the age-old religion of materialism. Technology is not the new religion. It is the new tool. The conflict is not between Islam and technology; it is a conflict between the purposes for which technology is used. It can be used exclusively for the purpose of material gain and profit, and it can be used for the purposes and goal of improving man and society, as defined in Islam. Social ethic as a basis for the Islamic concept of financing, in contrast to a purely monetary concept, is indeed a good example of the conflict of purposes.

The negative social ethic of technology that Mr. Adams referred to is in fact the result of the pursuit of purely materialist objectives. There is inherent danger in this pursuit. The traditional arts and crafts contain a message about an alternative objective for development. All too often we see only the surface, the forms, and the materials of our traditional arts and crafts. We must also learn to read their ethical message.

Arkoun

Dr. Serageldin has dwelt on "cultural originality", "the Islamic city" and "the Islamic bourgeoisie", concepts that have become popular since the beginning of the so-called Islamic revolution. But these concepts are based on an ideological approach rather than a scientific consideration of the history of Islam. Moreover, aspects of culture and civilisation, which differ in different societies, are often considered as being "Islamic". Generalisations such as an Islamic architecture, an Islamic thought, a collective Islamic behaviour, and an Islamic science are unacceptable. Islam has been one of several forces that helped shape these societies. One must consider Islam in terms of its particular role in influencing social phenomena and not as the only factor influencing the society. For example, the merchant bourgeoisie that emerged in Iraq and Iran in the third and fourth centuries A.H. was influenced by several cultural currents: Iranian, Greek, Indian, Arab, Turkish and Islamic. It would not be correct to describe this group simply as being Islamic. Nor would it be correct to describe the bourgeoisie that emerged after 1950 as Islamic: this group adopted Western models and was influenced by a Western outlook.

As for urbanism, which is also described as "Islamic", it has been influenced by pre-Islamic models, and has utilised materials and forms from the Greek, Roman and pre-Islamic Iranian civilisations among the peoples of Egypt and Yemen and others. Here one must expand the historical look to pre-Islam, and the sociological look to nations and societies that embraced Islam and entered the framework of the Caliphate.

Michael Welbank.
Photo: C. Little/Aga Khan Awards.

ture including institutions and urban form. I would like to make two comments on his paper. First, it needs to be remembered that specific established urban forms can often continue and be sought after by communities long after the factors that originally led to their creation have gone. In fact, change is often difficult to achieve on any rational basis because the origins of traditions have been forgotten.

Secondly, I would like to turn to the question of infrastructure and its influence on urban form today. Much infrastructure in cities is characterised by being provided on a centralised basis for technical reasons, for investment of efficiency, and for administrative convenience. The organisations responsible for infrastructure also become centralised and, what is worse, authoritarian. It seems difficult to envisage how individuals or groups can today exercise detailed control on the environment around them. Although it is difficult to create today a type of relationship between people and their environment which existed in the past, attempts should be made wherever possible. Some services can be relatively easy to maintain and some not. For example, local traffic management, solid waste collection and street cleaning can be. But, water supply (except at local level), sewerage, major transportation systems, telephones and electricity (except locally or by informal or illegal means) can be. How can local communities become involved in operating these services?
Lewcock

I am not sure that I agree with Dr. Serageldin. Some of the important aspects of the character of buildings cannot be dealt with on an individual level.

What is lacking today in Sana’a, for instance, is the development of an economic technology that is appropriate for this moment in time. An appropriate technology would then serve as the basis for the organic expression of architecture that would be truly satisfying, instead of the current stylistic gestures of copying motifs or features from the past. An efficient new local technology can only be established after painstaking research and testing by highly specialised technical experts, although individual members of the general public or traditional craftsmen may have important contributions to make.

Therefore, I would like to propose as one of the recommendations of the seminar that governments in all Islamic countries should give serious consideration to the setting up of building research stations with express emphasis given to the establishment of improved local technologies, i.e., technologies that are economically and efficiently appropriate to the various regions within their territories.

Serageldin

My friend Dr. Ibrahim has taken me to task on a number of points. I will try to clarify my understanding of the key points he has raised.

First, the question of men and institutions. In the Koran, the key guidance on institutional design is simply “And their affairs are to be discussed among them” (Sura 40). This has been supplemented in the Shari’a by the general rule that “Everything that is not explicitly forbidden is allowed” and that Muslims may agree among themselves on anything that does not specifically contravene a strict instruction. Accordingly, this flexibility in devising solutions and institutions that are suitable to any time-specific and space-specific situation was one of the most potent innovations in the Islamic system. This is not to say that Islamic civilisation did not create institutions, for it obviously did. But it is to emphasize that these institutions were extremely flexible, governed by certain codes of ethics and certain performance standards. Individuals worked within this framework to deal with new problems as they arose. This flexibility enabled Muslim culture to overlay the local existing cultures wherever Islam spread. And from that overlay emerged a new synthesis that, while remaining suited to the climate, the topography and other local factors it was nevertheless part of the greater Muslim community. This gave it the diversity and unity that have been the essential determinants of the Muslim society.

Second, the question of urban form in Medieval Europe: I do not claim that all western cities were based on a geometric design nor did I claim that all Muslim cities had an organic form. In fact, I tried to emphasise that there were exceptions on
both sides. Nevertheless, it is still true that in western town planning, there is a thread that runs from the Greeks and the Romans through the medieval period (town plans with their geometric fortifications and their star-shape patterns) to the rationalist ideals of the eighteenth century. Here, a guiding uniform vision of a certain geometry for the western city cannot be denied. On the other hand, in Muslim cities, we have the outstanding exceptions of Fatipur Sikri and al-Mansour’s Baghdad (the circular city), but we do not generally find such a guiding uniform vision for the cities in the Islamic world. There is, nevertheless, substantial similarity in the issue of parts of the medieval urban centers of Europe and those of the Islamic world. This is the natural reflection of a common technology. Similarly, one is not surprised to find today large avenues, and high buildings that use elevators in both Muslim and western cities today. The overall patterns of the past, however, remain sufficiently distinctive to make this generalisation, even though we fully recognise certain areas of overlap, because we choose to highlight the differences.

Third, I have been taken to task for using the term “Muslim bourgeoisie”. I do not deny that the term has a certain connotation in sociological literature. However, for the purposes of this discussion it is just as easy to refer to “Muslim middle classes”. It is true that an aristocracy may have ruled the destiny of the Muslim empire but the middle classes were those that determined the character of its urban form. This is still true today in many of our societies: the ruling elites come from what could be termed middle-class backgrounds and have carried many of the affinities of the middle class with them to their positions of power. The contemporary Muslim city is therefore still the artifact of the Muslim middle classes and reflects their visions and is constrained by their resources.

Fourth, the integration of the Islamic city into the metropolis. Dr. Ibrahim said that we are against sprawl and that we are against high-rise. True on both counts, for there is another alternative, namely “high-density low-rise” development, which have been shown to be perfectly adequate to produce a humane environment at high densities reaching up to 700 persons per hectare, which is about the maximum that could be authorized under any contemporary zoning ordinance for high-rise development. Therefore we are advocating high-density low-rise settlements as the preferred mode of pattern and settlement.

Abdulac

After the divergent comments made by Dr. Serageldin and Dr. Ibrahim about the role of the bourgeoisie in shaping Islamic cities, I would like to introduce a more nuanced position. Popular culture always maintains a certain autonomy, whether in dress or housing, although it is certainly influenced by the bourgeoisie. Their relationship is not strictly mechanical, but rather more subtly dialectical.

In Tunis, for example, the bourgeoisie has extensively adopted the model of the western extroverted villa, while dwellings in spontaneous settlements still contain traditional interior courtyards. However, as the inhabitants of those settlements grow wealthier, they embellish their houses with details and finishes borrowed from wealthier neighbourhoods.

Though I have not had the opportunity to study the recent evolution of housing models in Yemen, I undertook such a survey a few years ago in a nearby country, Oman. I was amazed to see that modern vernacular architecture in cement block related so closely to traditional vernacular architecture in wood and palm stems in terms of both interior and exterior spaces, the distribution pattern, the climatic orientation and general architectural typology. Poorer climatic performance is offset by greater durability and less need for maintenance. Moreover, the new vernacular houses are often quite beautiful, in their proportions, detailing and colour.

I have also been very impressed with what I have seen so far of the modern vernacular architecture around Sana’a. Ordinary masons are remarkably skilled: their work involves the continuation of architectural traditions, but with unquestionable creativity. I sincerely hope that the conditions for an equivalent level of quality may develop throughout the Arab and Islamic countries.

The value of existing spontaneous settlements should be acknowledged by the bourgeoisie in general and particularly by decision-makers and professionals. Land use plans, allotment projects, and urban regulations should not come into conflict with the aspirations and abilities of the poorer classes. Adaptive projects and policies ensuring the harmonious continuation and improvement of vernacular construction processes should be developed and implemented.

Cantacuzino

We have just heard two over-simplifications. One of these, that development is either high-rise or spread-out and low-density, has already been picked up by Dr. Serageldin who reminded us of the possibilities that lie between: medium-rise and high-density, low-rise and medium-density, etc. Even more important is to make proper land-use studies that transform densities into the various ways that buildings can be distributed over a given site. It has been shown mathematically, for instance, that the same density on the same site can be expressed either in the form of a sixteen-storey tower block or in the form of a four-storey perimeter block with a compound in the middle.

The over-simplification is Dr. Serageldin’s. There are many western cities that are not planned on a grid-iron. The medieval European city, for example, embodies characteristics of growth that are not unlike the Islamic city. When it comes to resolving the conflict with the motor car, the problems are similar. In the West much
effort has been made to come to terms with the motor car, and there seems no reason why some of the methods applied should not also be viable here. These methods include:
1) public transport;
2) underground parking and parking blocks;
3) the principle of the ring road with feeder roads for services and access;
4) traffic management schemes with one-way systems, controlled access, and pedestrianisation; and
5) smaller cars.
The popularity of Suzukis, for example, has made all the difference to the environment of the old city of Aleppo, which I have just seen.

Abdul-daim
The urban development project for Yemen that was presented represents a type of thinking common among planners. They are primarily concerned with economising on space and cutting project costs. But they often forget human needs. Housing must not be planned. One must not plan simply a shelter but a residence befitting human needs. A house must be a shelter but also a castle; it must be an aesthetic object but also a playground for children living in it. The ideal design does not yet exist.

Kiray
I wish to comment on the dichotomous view of society that places value systems and ideology on one side and the rest of the social structure on the other. The belief system, politics, economics, and the kinship pattern in each society are interdependent and all of them function together as a whole. A society such as Yemen — with its peasantry, self-sufficient agriculture, extended family network, authority patterns, and belief system — presents a consistent whole. In any society, if change starts with an inner dynamic, the whole modifies itself in all its aspects and becomes a new structure. But if two very different structures collide with each other, as is happening today in Yemen, and if change begins as a result of external dynamics, then it is definitely not possible to restrict change to technology only. There would be concomitant transformations affecting all aspects of the social life; values and ideology would be expected to change also.

In the very near future, self-sufficient agriculture will turn to cash-cropping, the family will be nuclear, patterns of authority will change, and so will the values and ideology, as if in a chain reaction. New relationship, new mechanisms, new institutions and values will appear intermediary forms. Just as the “nuclear family”, in its intermediate form, is likely to include a widowed grandparent or an aunt, so will the belief systems demonstrate particular characteristics in the intermediate stage. The changed attitude toward pictures could be mentioned to illustrate the intermediary form of the Muslim belief system. While “representation” is forbidden by Islam, today photographs are used as decorations practically in every house and people do not associate newspaper illustrations or television with the religious ban on human representation. In fact, a Muslim today would be puzzled if asked whether such pictures were forbidden. The meaning of “representation” has already changed and an intermediate form has emerged.

Two social systems will meet each other in these intermediary forms, which will ease the friction and make the whole system function again. When there is a collision between two different types of societies the role of the intermediary forms as buffer mechanisms is very important. At such times, in order to be able to grasp the reality one has to look at these forms in every aspect of society rather than looking at change as a compartmentalised process that could affect only one part of society at a time.

Abdallah
I have read in the reports and heard in the lectures and comments that the cost of building according to traditional methods is three times that of building with concrete. I very much disagree and, furthermore, feel that this talk has no connection with scientific methods. I would like to mention two practical examples:
1) Two tenders were announced: one in Ta’iz for a building to be done in the traditional method, and one in Hodeidah for a building to be constructed with concrete. The cost of the latter turned out to be higher, despite the fact that the entrepreneur of the Ta’iz project participated in the tender. The floor space as well as the rest of the specifications were identical.

2) In the case of the building of the Ministry of Health and the Ministry of Communications in Sana’a, the first was built following traditional methods and the second with concrete. The Ministry of Communications has had continuous problems repairing and maintaining their facility. I agree with some that the initial cost of stone might be higher, but the actual cost of building by traditional methods — even with relation to time — will be cheaper than building with concrete.

Lewock
Often traditional materials are not used in new work in Sana’a for the same reasons that have resulted in the lack of maintenance of the old buildings.

The expansion of the city, combined with governmental focus on the provision of cement and other new materials, has produced a very real shortage of many of the old materials. For example, the brick kilns of Sana’a have largely ceased to function, because the clay on which they depended lie under the newly expanded suburbs to the north. Bricks are now only available from the new factory situated at the coast,
but the bricks it produces are both inferior and prohibitively expensive due to transport costs. The same reason, the expansion of urban settlement, lies behind the shortage of the fine clay used to seal the upper surfaces of the roofs of the tall houses and make them waterproof. The clays are now in short supply and very expensive. Similarly, because measures have not been taken to ensure the mining, processing, and transport of gypsum and lime, these materials are prohibitively expensive in Sana’a (lime being even more expensive than cement).

I should like to propose as a recommendation of this seminar that all Islamic governments be asked to recognise as a principle that the maintenance of the provision of the appropriate materials for the economic repair of the existing structures is at least as important as the provision or importation of cement and other new materials.
Yemen: A Closer Look

Hodeidah: The Transformation of a Yemeni City

Bernard Verdier

Hodeidah derives its importance from its coastal location on the Red Sea. Its commanding position on major sea routes that link the Indian Ocean and the Red Sea to the Mediterranean Sea, and on routes leading inland to Sana'a, the capital, and to Ta'iz, the other major urban center of the Yemen Arab Republic (YAR), enhances its importance as a route focus and as an administrative center as well as its strategic significance as the country's main port of entry. In recent years, Hodeidah has experienced considerable economic growth, partly as a result of its locational advantages and partly because of the overall pace of development in the YAR, stimulated by remittances from Yemenis working abroad and by the general opening up of this formerly isolated country under more secure conditions of government.

With the economic growth of Hodeidah, however, has come an eruption of modernizing influences that have been strengthened by these same locational factors: the city has been mediating, and indeed has been transformed by, incursions of modernity whose effect has been as significant as that of the more visible imports of consumer goods that have passed through Hodeidah as a port of entry. This dual process of economic and cultural transformation is still underway and has been little studied, especially in its effects on the urban factor and in the challenge it presents for the management of the urban development process.

The present paper is no more than an attempt to delineate some of the main features of the urban development process, the significance of which is of course much wider in its implications than the specific manifestations encountered in Hodeidah. The paper begins with a brief overview of Hodeidah's background and history. It then identifies and briefly characterizes three emergent patterns of urban settlement and the new urban style that they are engendering in Hodeidah. Hodeidah's development process is next compared with that of Sana'a, the capital, whose very isolation may have helped preserve its strongly developed traditional character. The paper concludes with a tentative evaluation of the Hodeidah experience and a look at the future prospects of this urban community as modernization proceeds apace in years ahead.

Hodeidah, the main port and principal industrial city of the YAR, is the center of economic activity of the Tihamat al-Yemen the lowland coastal belt that it dominates. The only other port of significance in the YAR is Mokha, further south. The intervening coastal settlement of al-Khawkhah is minimally developed, as is al-Salif to the north, while Mokha has a more limited capacity than Hodeidah and
Hodeidah: The Transformation of a Yemeni City

This near destruction of the city reinforced the isolationist tendencies amply demonstrated by the Zaidi Imamate in earlier centuries. Although the isolation of Yemen generally was enhanced by the pre-emption of the international maritime routes by the competing external forces, more subtle effects, such as the installation of the telegraph system by the Turks, were to provide some foundation for the later, difficult process of nation-building.

After World War I, however, the British handed over Hodeidah and the Tihamat al-Yemen to the rulers of Asir, to the north. The area was re-captured by Yemeni forces in 1925. The Saudis occupied Hodeidah in 1934 as part of a territorial dispute, but the city and the Tihamat were returned to Yemen in that year by the Treaty of Ta’if. The city was under the semi-autonomous control of one of the sons of the Imam Yahya until the four-decade-old Mutawakkilite kingdom collapsed in 1962. Hodeidah subsequently emerged as the capital of the republican Hodeidah province (liwa) following the turbulence of the Civil War (1962-70).

Yemen was now becoming more open to the outside world. The ending of isolation had earlier resulted in the beginning of construction (in 1961) of the all-weather improved road from Hodeidah to Sana’a, with the assistance of the People’s Republic of China. Equally significant was the opening, also in 1961, of the deep-water port of Ahmadi, several kilometres north of Hodeidah. The port was built by the Soviet Union in the former lagoon of Khawar al-Kathib. Whereas the old port was no more than an open roadstead, only capable of handling 100 to 150 tons daily through off-loading of ships into lighters and dhows, the new port could handle several 10,000-vessels simultaneously. The port became the main port-of-entry for machinery, metal goods, and consumer goods of all types. This was to have a major cultural as well as economic impact on Yemeni society.

In any event, the people of the Tihamat al-Yemen had been much more exposed

less adequate transportation links to the mountainous but fertile interior.

Because of its strategic coastal location, port facilities, and transportation links, Hodeidah has received a significant amount of national investment during the past decade. Its development was stimulated by the completion of the paved road to Sana’a in the late 1960s and, subsequently, by the reopening of the Suez Canal. As a result of all these factors, the dominance of Hodeidah in the national economy is clear. It accounts for about a quarter of the nation’s non-agricultural activity, and it is second only to Sana’a in population. In 1975 the Governorate of Hodeidah had a total resident population of about 700,000 inhabitants. Sana’a Governorate had a total population of 800,000, and that of Ta’iz was nearly 900,000. But the city of Hodeidah itself had about 83,000 inhabitants compared to 81,000 for Ta’iz and 138,000 for Sana’a. Almost 60 percent of economic establishments with ten or more employees were located in Hodeidah in 1975, and 50 percent of the loans granted by the Yemen Bank for Reconstruction and Development benefitted enterprises located in Hodeidah.

Because of its location, Hodeidah has been exposed more than any of the other urban settlements in what became the YAR to the political, cultural, and architectural influence of the Ottoman Empire and, indirectly, of other powers seeking regional domination. Other settlements were more protected from such foreign incursions as a result of their isolation in difficult inland terrain. The Ottoman presence was particularly strong from 1848 until the collapse of the Ottoman Empire in 1919, following the upheavals of World War I. As a result, an Ottoman-inspired architecture flourished in the old urban core of Hodeidah, although many of the buildings whose architecture reflected the Turkish influence were destroyed during the shelling by Italian warships lying offshore during the Italo-Turkish war of 1911-12.

Photo: M. Wenner.

Hodeidah’s commercial centre.
than those of the interior to regional influences, and their settlement patterns (e.g., hut types) and ethnic admixture both reflected influences from the Horn of Africa, quite accessible across this narrow portion of the Red Sea. The Zaidi influence itself had been largely confined to the inaccessible interior, the Sunni influence having been long established the people of the coastal plain. Development of the nation as a whole, however, as represented by the modernisation of the harbor at Hodeidah and the new road link to Sana'a, had a significant effect by spurring migration from the coastal belt to Hodeidah. The result of all these influences was that a new urban pattern started to develop on the fringe areas of the old core of Hodeidah. This new urban pattern is primarily of rural origin and became more prominent as the oil boom caused a large influx of worker remittances, which were mostly invested in trade activities. Thus the attractiveness of the city of Hodeidah to rural immigrants has increased.

Three distinct urban patterns presently exist in Hodeidah as a result of the interactions between historical and economic forces.

The first urban pattern one can distinguish is predominantly the one that developed within the massive defensive wall that girded the old medina of Hodeidah. It is in many aspects similar in its spatial pattern to the one encountered in the old city of Sana'a or similar cities. It is a very tight, almost organic grid with narrow pedestrian streets flanked by multi-storey buildings that shade this part of the city. The dominance and vertical extension of these solid masses is a solution to the problem of protection from the sun because it facilitates minimal solar exposures of the building surfaces. The basic component of this urban pattern is a square house with a covered patio on the roof. The house with all activities contained within its walls is a cultural response to the Islamic requirements for complete privacy for the family. The individuality of such houses was en-

Hodeidah’s slum area.
Photo: B. Verdier.

Traditional buildings on the coast.
Photo: B. Verdier.
hanced by occasionally elaborate patterns of decoration. The Friday Mosque, which is flanked by a few outdoor cafes, is the center for all community activities that take place outside the confines of the house. It remains to this day the spiritual focal point of urban life.

The second pattern that one can distinguish is the built up area outside the city walls. This pattern is characterised by the presence of mixed buildings. Some are made of stone and red bricks with patios; they were the garden estates of affluent merchants, government buildings, or palaces. New one-to-two-storey houses built of cement have developed in this area and mixed in with the earlier buildings. Street patterns are visually less distinct than those in the urban core of the old medina, indicating a less intimate perception of neighbourhood community. This zone is permeable and loosely structured.

The third pattern that one can distinguish is the very large development based on traditional grass hut compounds of the type found on both shores of the Red Sea. This constitutes what is referred to as the slum area of Hodeidah. The area has expanded in a circular way and has a tendency to develop along the main radial axes, particularly the coastal road and the Hodeidah-Sana'a road. These compounds now comprise two or three dwelling units erected on plots of 300-400 square metres each. The more recent dwellings are very lightly built, usually in plywood or salvaged material. The dwellings are segregated at the four corners of the compound and provide shelter for the animals and for families, with women and men separated.

There is today a striking characteristic in the development of these three very distinct urban patterns: their convergence towards a uniform, architecturally undistinguished, and even unattractive urban pattern that seems to be very characteristic of the evolving urban fabric in Hodeidah. This new urban fabric is characterised by the sprawl of one-to-two storey buildings, built in concrete or cement blocks, with a definite “western” style of drab anony-
mity. This architecture does not incorporate any of the ornaments and related decorative characteristics found in the traditional Yemeni buildings and which exemplify attention and care.

The process of convergence of the three types of urban patterns is very simple, though still has to be fully analysed. In the old city, what remain of the old Turkish-style buildings are being destroyed. Those on the waterfront were destroyed to make room for major sewer lines. A large corniche road has developed along the shore, and stores have taken the place of these buildings. Other buildings, within the city, have collapsed, mainly because of lack of maintenance. They are being gradually cleared up. Also, as the centre of economic activities and particularly trade activities became established firmly within the old city centre, some of these buildings were also torn down to provide additional rooms for storage facilities and for stores. The architectural style of these stores, storage facilities and new buildings extended and merged with the monotonous architecture of low-income "western" style buildings; that is, they are concrete or made of cement blocks, one or two storeys high with flat roofs.

The second urban fabric characterised by brick buildings with patios is also disappearing very fast. As the center of the old medina is gaining economic importance, the value of land has increased in the vicinity of the old city. Most of these old red-brick houses are disappearing because the requisite brick kilns have also disappeared and they cannot be maintained. The plots on which they are erected are eventually divided up. New one-to-two storey buildings of the ubiquitous kind already described are now being put up on these plots.

Finally, as far as the third element of the urban fabric is concerned, mainly the slum, a very similar process is occurring. The large plots, particularly those that are very close to the city center, are being divided up. The traditional grass huts are being consolidated. Materials such as plywood
are being replaced by concrete blocks, and the house is reinforced so as to support another, or even a third, level. This process is very apparent in the slum area, which is close to the fringe areas described above.

Overall, the conversion of the three types of urban housing pattern gives a distinctive flavour to the city of Hodeidah, a sort of modernity without imagination that is also permeated by a tremendous dynamism to the extent that what is left of the past urban fabric is quickly transformed into the more modern type of buildings.

The above description seems to make a case for clear-cut distinctions among these three elements of the urban fabric. But it is very much apparent that in, say, five to ten years from now, there will be nothing left of the old city except slides and memories. In the absence of any kind of conservation effort on the part of the Yemeni government the old city is ready to disappear. Eventually, the end result will be that Hodeidah would look very much like any fast-growing port city in the developing world: a modern core developed in a haphazard way with a fringe area basically made up of slums.

It is very interesting to contrast the development of Hodeidah's urban fabric with that of Sana'a, which is explored very fully in Ronald Lewcock's paper. It is clear that Sana'a has also undergone many changes in its urban patterns. But there is no such contrast between the old city of Sana'a and its more modern parts. All the buildings, whether contemporary or two decades old, have kept some characteristics of the traditional Yemeni architectural practices. Because of the similar characteristics in the various kinds of buildings, Sana'a gives the impression of continuity. It is also interesting to note that many immigrants who have built new houses in Sana'a are coming from the more traditional areas of the central highlands. (There are very few people from the Tihamat al-Yemen, except in the case of street

A window in the heart of the old city.

Photo: B. Verdier.
The Hodeidah Experience: An Evaluation

Many positive aspects and interesting issues have also arisen from the development of the city of Hodeidah. One of the most interesting aspects of urban development in Hodeidah is the very manner in which the city has expanded, indeed positively without any specific constraints. Land was available and cheap; it did not offer any difficulties for erecting buildings. In the absence of a land registration system, and in the absence of land expropriation procedures, people have built freely wherever they wanted. As a result, they have not made the best use of the land, and the density of urban development in Hodeidah is extremely low. But, at the same time, this free occupation of land has definitely resulted in a mix of income classes as wave after wave of migrants have settled in Hodeidah without clustering in any specific neighbourhood or areas. This mix of classes reinforces to some extent the pre-existing continuity in the architecture style. Unlike the experience in some North African cities, the old city has not been transformed into an exclusion area for the very rich; neither has the fringe area along the old city been converted into a villa area. This continuity of architecture is thus the reflection not only of the architectural process but also of a social process.

It is also clear that the condition of the sandy soil favored the particular development of this urban fabric. There was and still is, at least in the short term, no special need for a water borne sewage system. The waste water is naturally absorbed in the soil. Therefore, besides the difficulty of getting water from some particular point in the city, there is really no incentive to build closer to the city centre to get access to basic services. The sandy soil also provides good conditions for foundations; there is no difficulty in digging, and the soil is very stable. This again encourages free building all around the Hodeidah centre.

There are, however, some interesting drawbacks to such a process of urban development. Because of the high outside temperatures in summer and autumn, the environment in Hodeidah is beyond the comfort zone; and because of high humidity, the combination of design elements is very critical. Appropriate materials should be used for cooling, and ventilation must be carefully designed both to cool the building at night as well as to give some cooling effect by an air flow near the occupants. The thermal mass of a building structure is a liability when the temperature is elevated above the comfort zone, and this is the case in Hodeidah if the buildings are not completely shaded and cool at night. The new houses, whether cement block or concrete, are not at all suited to the Hodeidah climate. For example, because of the extensive pattern of land use, they are not protected at all from the sun. This compounds the problem of architectural structure, as the walls are usually very thin and the roofing is not adequate to reflect the heat. Therefore, the medium-weight concrete structure in Hodeidah is oppressively hot, and this is the case for more than 50 percent of the new buildings being erected.

Two interesting consequences accordingly emerge. The first is that the construction process in Hodeidah is becoming more and more dependent on imported materials for building. In addition to window frames and reinforcing rods, the cooling elements, such as fans and air-conditioning units, also have to be imported. The second consequence is that this technology is now highly dependent on the provision of local energy, mainly of electricity. It is also dependent on the availability of skilled workers to maintain or to repair these materials. With the importation of these elements and the widespread erection of these buildings, the traditional providers of local building materials are gradually disappearing, reinforcing the very process by which the city of Hodeidah is in any event becoming more and more dependent on the outside world.

There are some additional problems that might emerge in the medium to long term. As the city grows very quickly, the need for water increases proportionally. The need for evacuating this water also increases. Since it is very doubtful that the city can manage to provide a piped water supply to all its new developments, most of the waste water would be disposed of directly into the soil, as it is done presently. If so, it would not be surprising if the soil condition too were to change over time, thus affecting the foundations of the buildings.

It also should be noted that cement is very difficult to cure in a city like Hodeidah because of the oppressive heat and the high degree of evaporation, and the sand mixed with cement is usually salty because it is very expensive to wash sand. The reinforcing rods are often exposed because of poor construction, and, as the air is salty, they are bound to deteriorate rapidly. It is not unreasonable to assume that the average lifetime for concrete struc-
ture in Hodeidah will not be over fifteen years, particularly if one takes into account the shortage of skilled labour and the attendant difficulty of maintaining buildings.

Finally, although the free development has had many advantages, one of the tremendous drawbacks is that the municipality will have to bring water supply, sewage, access roads and garbage collection services to this sprawling and very extended network. It is clear that because of the accelerating modernisation of Yemen, a city like Hodeidah cannot for very long remain deprived of most of these basic services. Although many efforts have been undertaken in that direction, there is still a great deal to do. In order to limit future infrastructure expenses, some thought should be given to more fundamental issues and solutions such as giving the municipality the right of eminent domain, and the authority to allocate land titles and to raise taxes.

It is interesting to note that the development of a modern type of architecture has in itself brought about the challenges of modernity and modern finance for the city of Hodeidah: how to raise taxes to maintain services, how to finance new services, etc. Additional challenges are how to ensure that trade is sufficient to provide all the materials that are needed to maintain and keep up the housing supply and, perhaps most significantly, how to make sure that this booming development does not at the same time compromise the environment of Hodeidah — that is, how to minimise air or soil pollution. The underlying challenge is how to make the city an attractive community for people who are looking for job opportunities and an appropriate modern life-style.

Reference Notes

1 "The Zaidi Imamate, introduced into the Yemen at the close of the ninth century AD, asserted for over a thousand years an exclusive claim to authority by divine right. Its doctrine, which remained constant throughout these centuries, formed a central element..."
The Old City of Sana’a

Ronald Lewcock

The opportunities for undertaking serious research in the Yemen, and particularly in Sana’a, which began after the end of the Civil War, have been nowhere more significant than in architectural studies. Although only a limited time has passed since then, and architectural researchers are seriously handicapped by the lack of any archaeological study within or near the city, and by the absence of classification on most of the documentation, the immense wealth of surviving buildings in Sana’a has made it possible to establish the main outline of building development for at least the last 300 years, and, in the case of mosques, for well over a thousand years. It has proved possible, subsequently, to link this in its essentials with detailed accounts of the physical character of the city in the tenth century (third century A.H.) and with what little can be gleaned of pre-Islamic Sana’a, so that the essential continuity of architectural design can be asserted with some confidence for a period dating back to the beginning of Islam, and, on the evidence of the tower-palace of Ghumdan and a few other fragments, to four centuries earlier.

K.A.C. Creswell, in his introduction to the edition of his classic Early Muslim Architecture, rewritten as late as 1958, could say that “Arabia, at the rise of Islam does not appear to have possessed anything worthy of the name of architecture”. The statement is surprising, in view of the wealth and quality of Arabian traditional architecture that is now being revealed, and which is clearly almost timeless in the antiquity of its lineage. The architecture had certainly been discussed, or at least mentioned, by earlier researchers and travellers. But his statement serves to underline that the kernel areas of ancient Arabian culture were not easily accessible for research until recently. Even now the scope of research which can be undertaken there is limited, especially in the archaeological and documentary spheres.

Approaching Sana’a by air is an experience
comparable with a first view of the Grand Canal in Venice. That reaction is not dispelled as one drives from the airport toward the city along roads flanked by farmhouses resembling fantasy castles.

Buildings of all shapes — circular, rectangular and square — rise out of the flat highland plain to seemingly impossible heights in apparently frail materials. The stonework of the lower levels may be rough rubble with loose mortar, but for most of their height the buildings are of mud, eroded by the monsoon rains until deep indentations mark the channels down which the autumnal torrents run to the ground.

Sometimes a building is so weathered that in places the whole thickness of the wall is revealed, and eventually it has been abandoned. But the ruin survives to its full height for decades, reflecting the centuries of accumulated knowledge that underlie its strength permanence.

The houses may be square or circular towers culminating at the top in rectangular rooms crazily cantilevered beyond the walls. Across the mudwork the Yemenis have laid decoration, sometimes projecting zig-zag courses to mark the divisions between storeys, or gypsum-washed cornices, corner pinnacles, or frames around the large upper windows.

The old city of Sana'a is distinguished by dozens of minarets that soar above even the highest houses. It is surrounded by an ancient wall pierced by gates, many now destroyed. The houses are still as unreal as those of the countryside, rising to as high as nine storeys, but the materials are more urbane, well-built ashlar with fine joints below and baked brick above.

Almost every house looks fresh and sparkling, with bright white decoration against the orange-red brick. There are more windows, and the original wooden shuttered openings are glazed with clear glass. The fanlights over the windows are much larger, there are more of them than in the rural buildings, and they are often filled with gypsum tracery designs containing brightly coloured stained glass. Older
houses retain fanlights of ancient type, translucent alabaster cut into thin sheets.

Inside, the houses have large entrance halls, frequently two storeys high, surrounded by store-rooms and mills for grain and salt, and rooms in which sheep, goats and other animals are kept. In each house a wide internal door opens into the staircase, which winds around a central pier and is enclosed throughout its height in walls. This is one of the reasons for the strength of Yemeni buildings, for the staircase acts as a kind of massive hollow column.

A carved door opens from the staircase at each upper level to give access to a generous lobby, around which the rooms are grouped, usually one main room, a store and a bathroom.

The level of the family living room is reached first. This room is also used for men transacting business, at which times women retreat to high rooms.

On the next level is the diwan, a kind of large parlour kept locked except when the family gathers for feasts, weddings and funerals. This room is also the place where childbirth takes place, on an elaborately arranged and decorated raised couch. Above the diwan are smaller, semi-private rooms and the kitchen.

At the highest level of the house is the afternoon reception room, the mafraj, generally used only by men. There an assembly of relatives and friends smoke the traditional water pipes and chew qat, a mild stimulant leaf, while engaged in conversation that is often phrased in elegant formal language or even in poetry. The mafraj is built at a great height above the ground; it has large windows on three sides providing magnificent views, which are at their best as conversation flags and the sun sets in the late afternoons.

One of the remarkable things about the old houses, noted by al-Hamdani in the ninth century, is the cleanliness and freedom from smells of the bathrooms, which contain the lavatories. This is achieved by the use of a “long drop”, a large masonry pipe conveying the waste into a closed room at the lowest level, where it quickly dries in the mountain air and becomes odourless. Later the dried soil is shovelled away and burnt as fuel in the public baths of each quarter, the ash serving to fertilise the market gardens around which the houses are grouped. Thus an ecological cycle exists that is remarkable for its simplicity, hygiene and economy.

Yemen is clearly a country in which architecture is ranked high, giving a pride and enjoyment to its owners that we can parallel in the modern West only by the pride we might take in the sight of our new car parked at the kerb. Until recently architecture in Yemen seems to have served the same prestige purpose. This is one of the reasons why it used to be so painstakingly
West facade of a house. The lower levels are of stone, upper levels of mud brick. As the walls rise vertically, the number and area of openings increase.
Photo: R. B. Lewcock.

A typical warehouse in the suq, this one for grain.
Photo: R. B. Lewcock.

maintained, and why, as modern values arrive, it is beginning to fall into neglect.
Yet even today the North Yemen government is concerned with keeping alive the tradition and style of Yemeni building. The Ministry of Public Works insists that concrete and steel should be hidden by traditional stonework, something that is not always possible and is fast becoming economically impracticable.
North Yemen is a heavily populated country. In the old city of Sana’a alone there are 8,000 old stone tower houses. It is unlikely that its extraordinary architectural heritage — not merely houses but also many caravanserais, public hot baths, and countless mosques of the greatest historic interest — would ever be entirely destroyed. But extensive damage has already been done, not only to the old walls and gates of Sana’a but, in the rest of the country, to the city walls and houses of Ta’iz; to the extraordinary Janad mosque,

Interior of an upper room in a traditional Yemeni house.
Photo: C. Little/Aga Khan Awards.
built during the first years of Islam; and, by neglect, to countless other buildings.

The Yemeni people will have to resign themselves to losing a part of their heritage with change, but it is to be hoped that steps may be taken to ensure that some strict, selective control continues to be exercised at top government level. Not merely for the people of North Yemen, but for all who prize the achievements of humanity, it is a matter as urgent as the preservation of Venice.

In the fifth century A.H. (eleventh century), the traveler al-Razi wrote a detailed description of Sana’a that in some ways it does not seem to have changed very much — one can actually walk through the town using that guidebook still. But the similarity was true five years ago than it is today. Now small changes are apparent in the old city, though, there are still not very many.

At its eastern end, in the foothills, there is a high fortification that is arguably the oldest part of the town. Because the name “Sana’a” is generally thought by pre-Islamic linguists to mean “fortified place”, and because the fort has a very ancient doorway with a bent entrance, it is quite possible that the original town was there. Aside from this ancient site, the whole town was largely contained within the later city walls until about six years ago.

In middle of the eastern end of the walled city, which was known as “the Persian quarter” in early Islamic times, is the martyrium of a Christian cathedral, which, according to medieval writers, was the largest Christian building built south of the Mediterranean. It was finally destroyed about a hundred years after the advent of Islam. A good deal of the material from it was reused to build the Friday Mosque. The houses around it are also old; they often have door heads at street level, and one has to go down a flight of steps to reach the entrance. The original house level can frequently be as much as six to seven feet below street level, so this is clearly a very old part of the town.

To the west of these houses is the market. Markets in most of the Yemeni small towns are outside the town gate; that is another piece of evidence that the oldest part of the town was to the east. But after the beginning of Islam, expansion was so rapid that the market was swallowed up within the area of the city.

The market of Sana’a itself is a single-storey area, and it retains its ancient character because this is still a largely conservative, conventional society. While there is a very western side to Sana’a these days — the people adopt western dress and watch television — there is a huge hinterland of tribesmen and of conservative people who are completely out of place in the modern part of the city and go to the old city to do their marketing. Whenever they visit Sana’a, they try to stay there, and the market serves them as much as it serves the Sana’nis. Of the modernised Sana’nis about 90 percent still go over the suq as well; they are thoroughly familiar with the old city and its type of shopping. In talking to government ministers earlier this year about their plans for the old city, I did not find a single member of the government who was not wholly in favour of trying to protect it as it is and to conserve the way of life that it contains. This seems surprising, for one certainly does not find that attitude in some other countries in the Middle East. It might be just paying lip service to the traditional pride of the Yemeni in his architecture and way of life, but I think they are genuinely extremely proud of this city and its great tradition and colourfulness, and they want to keep it viable.

To do so will be very difficult, of course, because inside such a city Islamic law functions, and it is disruptive to introduce modern institutions. For instance, policing the city involved using little watchtowers on top of the suq shops from which they were guarded at night. The shopkeepers belonged to an association headed by a sheikh who levied the shopkeepers to pay the watchman to do the guarding. That institution still continues in the old city of
Sana'a, though it is run down and outdated. Similarly, the way in which change takes place is quite extraordinary in terms of any modern city. The development of a property is effectively at the will and discretion of the individual owner; all that his neighbours can do, if they object to something, is to make a formal complaint to the governor, who will then hold a court of inquiry to see if any of their traditional rights as individuals have been violated.

Open caravanserais still exist right in the middle of that town, further evidence that the suq was outside the town at one stage. But there are also covered caravanserais all around the edge of the suq. One is a very complicated building in which there are two camel stables for the loading and storing of goods, one double-level and one triple-level.

Above them, on the roof, there used to be what were essentially hotel complexes, rooms around courtyards in which the caravan owner and his staff could stay. They were obviously fairly comfortable establishments. There was a pool on the roof in one of the courtyards and very commodious bathrooms, equipped with hot water. It was all quite sophisticated. The upper levels of those four caravanserais have not been used as accommodations for visitors since the beginning of 1972, but another traditional type of hotel was in use until about three years ago. It was a double-level hotel, the lower level for coffee, smoking and dining rooms, and the upper level for visitor’s accommodations.

The camel market, which was entered from the northern gate, becomes a water course in bad weather.

For the rest of the year it provided access to the suq for large camel loads and now also for vehicular traffic, although movement is almost blocked by a mosque in the middle of the maydan, which one has to go around.

The mills that grind sesame seed and salt are an important ingredient in a medieval Islamic suq like this one. There are about forty of these mills around the Sana’a suq. Another important element is composed of
The Jabbanah outside Sana'a walls. This open air prayer space for celebrating the 'Id prayers was, according to early historians, laid out on the personal instructions of the Prophet Mohammed.

Photo: R.B. Lewcock.

the buildings which are owned by the awqaf, built from bequests and lived in by poor people, students, and the old and sick. There are a number of these rooms over the shops in the suq around the edges of the market, as well as adjoining many of the mosques.

There are few jails. The people are generally punished in public by being made to wear shackles or chains. One little boy accused of stealing from a shop spent every afternoon after school six weeks displaying his chains in front of that shop to embarrass the shopkeeper.

The Great Mosque was built after the suq was already in place, during the lifetime of Muhammad, according to early historians. According to them, Muhammad's instructions were that the mosque should be built in the garden of the Persian governors, with the position of its west side determined by a large stone in the governor's garden. The stone is still there, although by now it is more than a metre below ground level. Part of the original garden also remains. The Great Mosque is built in a very ancient style of stepped stonework, which is linked to Abyssinian Axumite stonework. It has a treasury in the central courtyard, as most early mosques did, which may originally have had a fountain or ablution pool underneath it. There are over a hundred other, smaller mosques in the town.

The streets tend to be cavernous and to be urbanised in appearance, though that does not accurately reflect the kind of life the people lead there when one thinks of all the market gardens inside, behind the houses. The wadi bed through the middle of the town marks the limit of the town in the fourth/tenth century, as we learn from al-Razi's description. We also know from historians that the Ayyubids built their great palace across the wadi to the west; as conquerors, they would not risk living in the old town. There was also an Ayyubid camp to the north of the palace for the soldiers brought by Saladin's brothers; it became an urbanised area in the ninth/fifteenth and tenth/sixteenth centuries, when it was included within the walls.

From the study of Sana'a a great deal has been learnt about the function of the quarter system in Islamic towns. The boundaries of the quarters seem to change with great ease. The locations of the quarters in the town over the last thousand years were identified, as far as possible, and it was found that the number changed every century or so, as did their boundaries. Apparently the quarter originally was an idea for a particular tribe or group of friendly tribes that had a wall around it with gates, as al-Razi describes in Sana'a. The walls protected the tribesmen from their traditional enemies in other quarters in the city. But Sana'a, quite early on, probably at the Ayyubid period or even earlier, became what they called hejira, a place which was outside tribal law. It was completely protected by mutual agreement, and no fighting was ever allowed inside the city wall.

From that time on, walls around the quarters were no longer needed, nor was it necessary to obey the traditional laws of the quarters — for instance, that no one was allowed, during any public gathering, wedding or funeral, to cross from his own quarter into another. All that seems to have been abandoned in Sana'a about a thousand years ago, and since then the number of quarters has varied between fourteen and four.

There are a large number of mosques and fourteen public baths in the old city, and it has been very difficult to prove that their location related to the quarter system. In fact, there seems to be no connexion between the number of mosques, the number of baths, and any quarter structure. For one thing, use of the baths alternates between the sexes — men on some days and women on others — and it does not seem that people in particular areas always bathed on certain days. The data, as far back as can be taken, suggest that people simply bathed in the bath nearest to them that was available for their sex on the day they chose to bathe. There was no obligatory connexion between the local
bath and the people who lived in the houses near it.

The baths are a very fine element in the old city. The hot rooms are underground, because it is rather cold at night and for short periods in winter. This avoids the need for insulation and makes water circulation easier. The baths generally have fountains and are quite fantastic in atmosphere. In some the fountain is not working, but generally the baths are well preserved. In fact, the government ministers with whom I have spoken recently are talking about building more baths. Unhappy about the poor condition of some of the older baths, they are thinking of simply replacing them with new ones. This is a defeatist attitude, so far as conservation of the old baths is concerned; but clearly no one is giving up the idea of public bathing.
in Sana'a, even among the sophisticated people. This may be because the chilly climate makes it a great luxury to be able to have a hot bath. The public bath is also a pleasant place for talking to friends and relaxing.

In the early sixteenth century the Ottoman Turks conquered Yemen, and it may well have been the Turks who established the area outside the western gate as a kind of garden suburb. There is, however, some evidence that it is earlier. At any rate, certainly since at least the tenth/sixteenth century, the area outside the western gates was lived in by townspeople, although it had no walls around it until the twelfth/eighteenth century.

It was an area with a rather different style of house, each one of which had a large open air pool and sometimes a courtyard, with one or more reception rooms at ground level rather than on the roof. These houses are much closer to what one might think of as a typical Islamic house elsewhere.

This “suburban” area became fashionable for the rich and remained a favourite residential area until 1947, when the civil war broke out and the Egyptians came in force to help the Republicans. They advised the setting up of a new town along the western wall. Its main street, which runs parallel to the western wall, now has the cinemas and banks and modern hotels. From there the Egyptians encouraged the laying out of new roads in a radiating pattern from the original western gates of the city through the old vineyards and the gardens of the old villas and tower houses. Along these streets there are now embassies, modern office buildings, banks and so on. In short, it is in this old garden suburb that modernisation of most of the city centre is taking place.

Finally, beyond this modern area, is that the Jewish quarter until the 1950s. But that is not the original area of Jewish houses. A series of unfortunate racial incidents in the middle of the eleventh/seventeenth century led to the expulsion of the Jews from the old city of Sana’a for about two years. Because the city’s economy could not survive their departure, they were brought back; but, rather than re-turning them to their original quarters within the walls, they were settled in an area well to the west of the old city that became known as the Qa’al-Yahud. When the Jews left Yemen as a result of the Zionist exodus between 1949 and 1959, the quarter they left behind was regarded a very desirable place to buy a house by many of the people who already owned houses in the old city, even thought the Jewish houses had different plans from the tower houses in the old city. Many people still prefer these Jewish-type houses today.

The Egyptians put in the first ring road around the city, outside the walls. As the city has been spreading west, north and south very rapidly, especially in the last six years, more and more low modern buildings are being built. The changes in the kinds of houses are interesting. A favourite type is from the Turkish occupation, when a Turkish-style two-story house became fashionable. There is now a modern version in which the living quarters are on the upper level and the car park and services are underneath.

The old style of tower house is very narrow in relation to its height. Originally, these were houses for large nuclear families. The average number of people living in such a house is now seven, and some of those houses are huge — up to nine storeys high. Any houses that have many more than seven people living in them are apt not to be occupied by Sana’nis but to have been subdivided into smaller living units and rented to people newly moved into the walled city from the countryside.

How many of the inhabitants living in the old city are immigrants, and how many of the original inhabitants have moved out? These are questions to which we have, as yet, no clear answers. Opinions range from there being half the original population and half new arrivals in the old city to a very small percentage of new arrivals and the majority still the original Sana’ni population. In the absence of detailed sociological and undemographic studies, it is very difficult to prove either view. However, the Central Planning Organisation has embarked on such a study, which is to be completed in mid-1983. It is hoped that the next step will be the preparation of detailed strategic studies that will enable the pattern of relationship between the original walled city and the much larger offspring that now surrounds it to be established. This would pave the way for a plan of action that will ensure its continuing life and prosperity.

At the request of the government of the Yemen Arab Republic, UNESCO is preparing an international campaign to conserve the old walled city. While it is intended that this will be launched by the UNESCO Director-General later this year, certain problems of the old walled city are already receiving attention:

1) The most severe and urgent problem is water in the ground, causing cracking and rapid collapse. The primary cause has proved to be leaking water pipes. This fact has necessitated a review of the whole system of water distribution, with the aim of thorough testing of every part of the system immediately and replacing defective pipes wherever necessary.

2) The living conditions on the streets are generally felt to be appalling. Garbage and rotting litter, sometimes mixed with animal and human excrement, combined to produce the most unhygienic and unpleasant atmosphere imaginable. Not merely is this a potential hazard for the spread of epidemics, but it has a major effect on the inhabitants, persuading many to abandon the old city completely for the sake of their children’s health, while many of those remaining are discouraged by the environment from repainting and doing repair work to maintain the appearance of their houses. The government is urgently implementing a new system of garbage collection and street cleaning.

3) In wet weather the streets are often impassable because of mud and flowing water, conditions that are exacerbated by vehicular traffic. Paving of the streets with
Plan and section of a typical cluster of houses in Old Sana’a.
Drawings: R. B. Lewcock.

small stone paving blocks is being investigated as a matter of high priority, together with storm water drainage.

4) Congestion of parked vehicles makes passage by pedestrians and motorcars nearly impossible in many areas. This is cited as one of the main reasons for the abandonment of the old city by the old families. Vehicular circulation and packing, and their effect on the old city, are being carefully studied in the context of the expanded city of Sana’a as a whole.

The preservation of as much of the physical context and the monuments of the old medieval city as possible is being planned. The goals are to convey its unique character along with its sense of age and history and to ensuring the preservation and rehabilitation of the traditional way of life of the medieval city as much as possible for those who desire it. Underlying, however, is a recognition of the importance of carrying the burden of history without stifling urban life — so that the population is encouraged to change and upgrade its way of life as it wishes. All conservation and rehabilitation planned is to be conditioned by these aims.
Mokha: The City of the Past and the Future

Dirar Abdel-Daim

Mokha has been the gateway to Yemen. In opening itself to the West and to the world as a whole, Mokha preceded every other Arab city. How it was established; which communities of differing nationalities and religions were formed; how the city flourished and fell; and what common efforts were made by both government and the Yemeni cooperative system to reconstruct the city — these are all questions to be addressed as we explore the strange history of this city.

Mokha has given much to both the East and the West. It has brought countries, eastern and western, into close contact in commercial, economic, and political fields. In addition, this city established diplomatic relations and began international trade according to modern rules. It organised trade fairs and set up trade centres for different maritime countries from the fifteenth century up until the end of the nineteenth century.

It was through Mokha that the world came to know Yemen and that Yemen became acquainted with the outside world. Today the people of Mokha and all the Yemenis are eager to see it take up its past glory, for it constitutes the glory of Yemen.

Commercial History

Studies and research thus far have failed to determine the route taken by the Roman leader Ilius Gallus when he failed in his attempt to invade Yemen in the year 25 B.C. He reached Mareb either by going across the deserts or through the region of Mokha. Furthermore, archaeological remains show that Mokha has long been a sacred city, for the word Mokha is close to the Himyarite word mugab, meaning “moon”, “god” or “the land of gods”. Many of the names of the Mokha region come from Himyarite. In the past, the city of Mokha itself was known by a Himyarite name “Thoubah”, which means having a door or gate.

Though we cannot fix an exact date when Mokha first began its contact with Europe and the Far and Near East, or exactly when Mokha became the trading centre between East and West, we have discovered the dates when modern trading centres were established with representatives of the major maritime countries at that time. But even before Mokha was a commercial centre, it was a station where ships could stop for fuel, food and water. It is important to note here the various trade centres that were set up in Mokha during that period and those that were used by Western countries. It is also worth mentioning that a map for Mokha had been drawn up before 1541 (when a Portuguese sailor named D.G. Castuo used this map to reach Mokha) and that a second map was drawn up by Augustin Fitzhew of Britain. By this time Mokha was no longer considered a stopping place for fuel but, rather, a place subjected to a war of competition between the various parties that wanted to invade the East or use it as a trade centre. This was made clear when R. de Camara anchored his fleet near Mokha, intending to get water and then to burn the city in the year 1586; he succeeded in getting the water he needed but failed in his attempt to burn the city. In spite of this, Portuguese domination over the Red Sea did not last for long, especially around the coastal regions facing Mokha. Portuguese rule was brought to an end in 1578 by the Turkish fleet based in Mokha under the leadership of Ali Bayso. De Camara’s efforts came to no avail. The victory of the Portuguese fleet in crossing the East with flying colours paved the way for a new trade cooperation and a new stage of Mokhan civilisation.

According to a Yemeni legend, the British first entered Mokha unintentionally in about 1430:

In the year 1430, one of the captains on a British ship sailing near Mokha was seasick. At that time, Mokha was unknown and was not even indicated on the map. In its place, Mouze’a was shown. (Today Mouze’a is not a port but a village that lies 35 kms. away from the sea.) They saw the huts of a quiet village near the Yemeni coast, and the ship landed near this unknown village where the captain asked for some medicine.

The first captain of the ship asked how medicine could be found in such a village, to which the other captain replied that wherever there are human beings there is always disease and medicine. Suddenly, all the sailors saw the poor villagers coming towards them and welcoming them in small boats, and they met then Ziahad, whom they asked for medicine. So, Ziahad told them, “Follow me to the sheikh,” named ‘Ali ibn Omar al-Shazli, an ascetic who set up house there for himself and his followers. When they reached his place, the ascetic welcomed them and gave them a warm drink that dispelled their feelings of thirst and sea-sickness and refreshed them. So, they asked for it for their sick friend and indeed they went to him and offered him the drink (Mokha’s coffee) and as soon as the sick captain had drunk it, he also recovered. So the next day he went ashore to thank the ascetic, who told him “Empty your ship of its goods and you will certainly gain a lot.” The captain paid heed to his advice and indeed everyone came from all parts to buy the goods on sale, which made the captain’s fortune. The ship returned to India afterwards and both the captain and the sailors spread the news about this blessed sheikh. So, ships began to sail: Mokha turned into a port. When Sheikh ‘Ali ibn-Omar died, he was buried in the same place he lived, so that the villagers built a mosque for him.

Al-Shazi has a mausoleum and a mosque with a minaret that is one of the biggest in Yemen; and it is used now to guide ships, with lamps and torches lighted on its top all night long. The Shazi’s mosque was not only used for prayer, it was also a meeting place for debates.

In 1618 British trade in Mokha became more formalised, and the Anglo-East India Company was established in Mokha. Its activity lasted until 1820. However, piracy, which characterised this epoch (Dutch piracy in particular) hastened the withdrawal of the British. In 1662 a Dutch
pirate named Herbert Hugh, the captain of the Black Eagle, burnt the ships waiting near Mokha port, looted the town, and terrorized its people. As a result, Anthony Smith, the company’s representatives in Mokha, dissolved the English-made centre and closed it down; but it was soon reopened, and it was not until 1820 that it was shut down completely.

Before 1618 Dutch traders and captains ran their own activities. One of them was Van Der Broca, who had the consent of Mokha’s merchants as well as its ruler. The centre did not last long because some Dutch ships attacked the ships belonging to the Portuguese Indian Company in Bab al-Mandab in 1620. This induced the Turkish authorities to confiscate the Dutch trade centre in Mokha and to imprison all of its officials. The centre was then run by Willy William de Mild, who in the end was caught by Ahmed al-Fadl Pasha, together with other Dutch pirates and traders, and was sent off to Sana’a.

On 12 March 1623 a ship named the Huse-don entered the port to do away with the centre. However, trade continued sporadically with Holland, and Mokha’s coffee started to be sold in Amsterdam in 1661. In 1684 trade relations with Mokha were called off until the Dutch trade centre was reopened in 1696, under the supervision of Nicholas Wiltzer. In 1721 Mokha’s exports to Holland were on the increase, but in 1724 Dutch representation in Mokha was ended. In 1738 the company decided to change its centre from Mokha to Java because Java’s coffee was cheaper than Mokha’s.

In 1642 the East Indian French Company was set up mainly for the East, and it was only in 1664 that it was named the East Indian French Company. In 1665 a French ship, the St. Paul, left Brest on its way to Mokha, but it failed due to weather conditions. On 6 January 1708, two French ships left St. Malo: the Cuericos, which had de Mirva as its captain, and the d’Elegant, which had Champaign as its captain. Both reached Mokha on 3 January 1709. It was then that a trade agreement

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**Plan de la Ville de Mokha**

Situee sur la Mer Rouge.

Mokha from the West, ca. 1804, from a sketch by Captain Luther Dana of the American Discovery. The southern two minarets still exist.

Source: From the collection of the Peabody Museum of Salem.

Mokha from the north in 1830.

Photo: From Eastern and Egyptian Scenery by Captain Head, London 1833.
was concluded between the French and Mokha's ruler. A direct maritime route was opened linking St. Malo with Mokha. But after a year trouble had already flared up, for the French had to pay only 5 percent tax on imports and exports, while other Europeans paid 25 percent. So Mokha's ruler increased the tax for the French so that they would be on par with the others.

In 1737 the French fleet consisted of four ships: the Maorias, the Héron, the St. Pierre, and the Andouine. Under the leadership of De Lagarde Hazir, this fleet bombarded Mokha in 1737. Compelled to capitulate, Mokha accepted an agreement in 1737 that gave the French trade tax concessions. Nevertheless, the French took Yemeni coffee seeds on both ships, the Pykes and the d'Elegant, to cultivate coffee elsewhere. French relations with the port of Mokha cooled, and the last ships that entered the port were the Lewis Golly in 1788 and the Prince de Condi, the Admis and the Eunice in 1789. When the French left Mokha, they took with them the seeds and bushes of its coffee to be cultivated outside Yemen. This led to the destruction of the most important means of living in Yemen.

Between 1612 and 1728, ships from the East Indian Company of Austria, Denmark, and Sweden also traded sporadically in the port of Mokha. Trade between Europe and Mokha flourished during the 1820s and 1830s, but certain events in Europe, particularly in Britain and France, as well as the digging of the Suez Canal in 1869, led to great changes. Mokha's fortune started to dwindle, marking the beginning of the end of the most important maritime civilisation in Yemen. The Turkish-Yemeni war was another factor that changed the course of events, affecting the future of trade and agricultural production, especially that of coffee.

An American trade centre was first set up in Mokha in 1804, and the American flag
was hoisted above the house that belonged to the members of the centre. The first American ship to reach Mokha was the Ricafar, which took the route of Mariut in 1798 and had Joseph Robs as its captain. Hence, it was the first American ship to reach a port in the Arab peninsula through the Red Sea. Another American ship, the Polesis Kitani, followed the first one. Until 1812, when war was declared between the United States and Britain, there was a trade route between Mokha and Salem in the United States, to provide the latter with the products of the East. When peace was established in 1815, four U.S. ships were loaded with coffee from Mokha. The amounts of coffee imported to the United States from Mokha in 1809 came to about 2 million pounds. It was the ship America that carried most of the cargo.

From March 1826 until the beginning of 1827, famine raged through Mokha, and it was thanks to the captain of the U.S. ship Anna that Mokha was supplied with food on 20 June 1826. After that date U.S. trade flourished and new markets in Africa and Asia were opened. It was then also that the years of hardship commenced for Mokha. With the opening of the Suez Canal, Mokha was no longer preferred as a maritime or trading mediator.

1) To the east, there was Bab al-Shazli. Today there is nothing left of it except some pieces of red blocks. This is found to the east of the mosque and to the south of the fortress that is itself to the north of the mosque.

2) To the west, there is Bab al-Sahel, the coastal portal. Its exact location has not been identified.

3) In the centre is Bab al-Amudi. Its exact location is not known either, but it is possibly located near the al-Amudi fortress, or the al-Amudi mausoleum, which is only one of the many mausolea spread all around Mokha city.

4) Aden, the small portal, is called Adeni Portal. Its location has not been discovered until now.

The fortresses surrounding the city were:
- Malta fortress, which lies in the south and is named Adenian fortress. It lies to the east of Said Ahmed’s house, which is next to al-Fudali’s house. Now it is to the north of the main street.
- Al-Fudali’s fortress, in the west, near the coast. Its location is now exactly known.
- The coastal fortress, called al-Farida fortress, which is near the chemist. Its remains are still there.
- The al-Amudi fortress, which lies in the al-Amudi region. It is still there but needs restoration and conservation, for it has been looted by vagrants.
- Al-Shazli’s fortress, near al-Saqaf’s old house or what came to be called Abdul-Daim on the east side.
- Al-Tayyar’s fortress, located at the top of the sea (on the northern Qibli side) exactly in the northwest of Mokha City, which lies itself above the Qibli island. It has now disappeared.
- Abd al-Raf’s fortress, marked by a lighthouse that dates back to 1319 A.H. (1801). It was completed two years later and was functioning until 1947. The lighthouse fell on 1 April 1977 just after midnight. Its disappearance meant the loss of one of the most important features of Mokha.

Mokha’s imports came at that time from all over—for example, from India, China, Java, Egypt and Basra. From Mokha goods were exported to Aden, Jedda, and Masu‘i in sailing boats of Indian, Gulf, or local fabrication. The ports of Djibouti, Ḍarb, and Hodeidah were nothing but fishing places, especially for whales.

At that time Mokha’s population came from: 1) different regions of Yemen and from Mokha’s original inhabitants; 2) Indians, Bohras and Albanians who were concentrated between al-Amudi and al-Shazli or between the latter and the Malta fortress; 3) Turks, Iranians, and Egyptians; 4) Somalis and Denkalis (they came from Eritrea, which is now east of Ethiopia); 5) Westerners, like the Dutch, the British, the French, the Americans, and the Danish, who were concentrated in a district near al-Amudi; and 6) Jews, who had a small synagogue in the region, north of the main road leading to Ta‘izz (near the Malta fortress), which has now disappeared completely.

Every group and sect in Mokha had its mosques, its places of worship, and its markets, such as the Indian market, the Iranian market, and the Bohra market. Its people were wealthy.

In Mokha there were many different kinds of trees, including more than one million palm trees. Recent studies have shown that there were more than one and a half million date trees stretching from Mokha to al-Hukm country. Unfortunately, torrential rain together with pollution destroyed all these trees.

In 1834 there was a delay in sending land tax to Sana’a. The person responsible used to deliver it to the state. Five horsemen were sent to him from the capital. When the soldiers arrived, they found outstanding ways of life. They found bankers (sellers of gold and silver), a significant population, and wealth gained from export and import trade. They were so surprised at this state of affairs that as soon as they went back they cried out: “People of Sana’a, come to Mokha!” It was thus that Mokha was invaded by the governor Ali
ibn al-Mukthel, who led four hundred soldiers there for its riches.

When the army reached the upper part of Wadi Zubaid, the merchants of Zubaid sent word to Mokha's merchants. When Zubaid's merchants asked the army where it was going, the men replied that they were going to Aden. So the army, on its way to Aden, met al-Ushfa and al-Ahmar — two of the most dangerous tribes who lived around Mokha. Both tribes were lying in wait for Mokha's people because of the disparity between life in the city and its countryside. Hence it was easy for the invading army to ally itself with the two tribes in a surprise attack on Mokha by night. For more than seventeen days Mokha was besieged, though the siege did not last more than twenty-seven days.

During the siege the al-Mushilha and al-Hukm tribes managed to come close to the city in small boats, coming from the sea and from the direction of the wells that lie between the region of al-Khadra and al-Kadha (south of the city). When the siege drew out, the colonies were dispersed, and settlers began to leave Mokha by night, together with some local merchants. Fear was such that some Bohran and Indian merchants and some of Mokha's own people even left their turbans and their coats hanging outside their houses and shops while fleeing.

The soldiers began to loot and destroy everything, taking out the wood and coloured beams from abandoned houses and setting fire to them. When the Turks were about to leave, the soldiers followed the tracks of the Imam's soldiers and destroyed everything that came in their way. When the Qadi Abdallah al-Medheji passed through Mokha, he despaired: “Its appearance disappoints us like mirage but once inside it is dilapidated. Owls and crows are crying within and so ruined it is as if it were a burying place.” And on goes his poem of lament for the past glory of the city.

In 1361 A.H. (1942), Sheikh Mohammed Ali Othman was posted as Mokha's governor, so he convinced the Imam to put right the well (which was called the old well after only three years of his coming to power in Mokha). He began certain works, such as repairing the al-Medina and the new al-Deka bridges (the latter links al-Ziadi island with Mokha across Khur al-Ziadi). To compensate for what the floods destroyed, he also began cultivating palms and other trees and once again managed to convince the Imam to build the route linking Mokha to Ta'izz, but the route was not completed. When Imam Yehya was assassinated in 1948, work on these projects was brought to a halt.

There is a period in this study that is considered to be non-eventful, due to the lack of precise sources: 1820 — 1948. However, one can reconstruct from the imprecise memories of individuals and from some available documents a general picture of the events during that period.

1) Earthquake. Mokha had earthquakes in 1898 that resulted in the destruction of one-third or one-fourth of the city.

2) Turkish Bombardment. When the large numbers of Turkish solders started to depart from Mokha in 1919 (it took until 1923 before all of them left), they destroyed everything that belonged to the Yemeni civilisation. It was told that a caller cried out that the Turks, in the last day before their departure, would salute the city of Mokha at dawn by firing a few shots as a farewell. Indeed, a shower of bullets descended upon the city at dawn; but it was not a farewell salute, for it bombarded the city for six whole hours. While the fleet was far away from the city (i.e. by 8 kilometres), it carried away the last Turkish soldier together with other equipment, and fires spread everywhere.

3) Flood and Famine. In 1938-40, floods from the east inundated the whole city, destroying both people and palm trees. Thus it came to be called “the pollution flood”. It was followed by a plague and then by famine in 1945-46. The latter killed the majority of the urban dwellers as well as the rural ones. It was only then that the government paid heed to Mokha's state of affairs and started certain reforms.

Poets have described Mokha after its destruction and the disappearance of its fertility, embodied in its brooks, its palm trees, its doomed palms and its tamarisk.

4) U.S. Interest. In 1952, after the Egyptian Revolution had taken place and after Eritrea had joined Ethiopia in a federated system, the Ethiopians considered this as the return of a dear child to his mother. It was also in the same year that the well-known Asmara base was founded for the United States. Another maritime base in Mousawa's replaced the old Italian base known as Radio Marina. This caused the United States to start being interested in Mokha so that it could complete its air and sea control in the area. Thus, between 1958 and 1961, Americans formed the U.S. professional training centre in Mokha. They also established the fourth U.S. base in northeast Ta'iz, so as to eventually set up an air and sea base in Mokha. It was then that Mokha began to flourish once again, especially when the Americans began building the roads linking Mokha, Ta'izz, and Sana'a. This strengthened Mokha's links with Ta'izz, the capital of Liwa'a. In 1959, when the Russians started work on building the port of Hodeidah, Mokha's role as a port came to an end, in spite of the American experts' efforts to remove the sands in the port and to safeguard its depth. In addition, Mokha's status as a true port was brought to an end because devastating winds blew from the south and lasted for a period of six months.

5) Ethiopian Competition. On 3 May 1958, the Emperor Haile Selassie I of Ethiopia laid the foundations for a new port to be constructed in 'Asb. 'Asb lies 860 kilometres away from Addis Ababa, the capital of Ethiopia, and lies opposite Mokha itself. There are of course close economic and social ties between 'Asb and Mokha. However, in February 1958, a Yugoslav company began the work on 'Asb (the sum spent on it reached 26.1 million Ethiopian birr — a large sum) and the expansion of 'Asb was detrimental to Mokha. Furthermore, many other ports were also built in the area.
This explains why Mokha was no longer a port in the true sense of the word, for it was reduced to being a place for small ships and transport vessels carrying products and equipment. Out of all the ports in the area. Aden monopolized the trade route by land between Rahidah (in the region of Ta’iz) and itself. This meant that imports were restricted only to Aden, as import duties and local taxes were so low. Another reason that accounted for Aden’s ascendancy was the presence of agencies of Yemeni middlemen and of wholesale traders. Furthermore, Aden was stable, and this atmosphere encouraged the privileged position it held. Aden had another advantage, that of cheap labour; for immigrants came from the north and were the ones who did the hard work, such as unloading the ships. So it was really men from the north and the centre of Yemen who did the work of loading and unloading. In addition, both ‘Ash and Djibouti were full of porters from Yemen, and it was not until 1958 that this was brought to an end when the local people in both ports began to accept their jobs.

To make things worse for Mokha, another port, Almadi, was set up with the help of Soviet experts in 1961. This was the straw that broke the camel’s back, for it paved the way for the Revolution of 26 September 1962.

6) Revolution in Yemen. In spite of the war, the government tended to the reconstruction of Mokha and to rebuilding a route leading to it. But the war inflicted great damages. As a result, every leader who came to power promised to rebuild the port; this was finally achieved in 1980. The road was extended in the same year between the intersection of Hodeidah and Ta’iz to Mokha, but it did not resolve much. Despite all the modern preparations made for Mokha, hardly any ships were towed there (perhaps two or three per month). There were several reasons for this, but the most important one was local: the port of Mokha was subject to the barter of company representatives who wanted Mokha to follow the same style of cooperation (concerning low taxes) as had been concluded with the responsible officials in the port of Hodeidah.

Cooperative Movement

On 25 June 1973, at the time when the General Union for the Organisation of Civil Cooperation for Development was set up, Civil Cooperation (the old name for the Organisation of Civil Cooperation for Development) in Mokha became so active and prominent in Ta’iz that it directed development in the whole region. Civil Cooperation, in all of its activities, sought the eradication of underdevelopment. Indeed, the first step made was building the first cooperatives in the new republic before three or four years had elapsed. Mokha’s cooperative was established in 1972, but it did not achieve its goal because it turned into a cooperative that takes more than it gives. This continued until 1980. On April 10, in a popular though official meeting, it was decided that a Cooperative Committee would be set up to improve the city of Mokha. Mokha’s youth — long denied the right to stand for elections — took responsibility in this committee for the first time. This occurred because of the government’s decision to disregard certain interest groups so that the whole of the people of Mokha would benefit.

The Committee achieved much during the twenty months from April 1980 to November 1981. It allocated its resources to planting trees on a large scale on the road between Mokha and Ta’iz. It revived the project of planting trees in the south of Mokha, using the detailed plans that the French Company for Rural Development had provided. It also gave Mokha two plows to remove the soil. It started renewing parks and planning for a hotel system based on motels. The latter is still being discussed by the Organisation of Civil Cooperation for the Development of Mokha, for the main obstacle standing in its way is money. The water project was revived and its management was reorganised.

After the victory of the candidates nominated in the elections and, with the new centres installed in the Administrative Organisation and in the Assembly, a new epoch began. New energies to build the country emerged, as did the desire for completion of the plan set by the Cooperative Committee for Urban Development. The Organisation of Civil Cooperation prepared its fifth plan according to the global five-year plan for Civil Cooperation and the State. It also started (for fifteen months) building two schools and adding a few classes in rural areas. It built two clinics with the help of the Ministry of Health in the al-Gurafi and al-Tubani areas, and it discovered, for the first time, places that no one had reached before because of the difficult access through palm trees and swamps.

It also was learnt that people living in Hisi Salim did not know anything about what went on around them. Their life was monotonous and even their food and drink was primitive. Diseases, especially malaria, were so chronic in children and in adults that the Organisation, with the help of the Ministry of Health and the French Company for Rural Development, made comprehensive plans for health protection and for the provision of medical staff capable of providing first aid. In addition, the first thing that the Organisation did was to set up in different regions complexes consisting of schools, clinics, a water project, a sport club and a cultural area.

The next step should be to supply villages with public utilities and to replace the traditional shanty towns with houses made of stones. But the implementation of this stage (i.e., cooperative houses) is still out of reach. It can be said that the first stage (i.e., the building of the school, the clinic, and the water project) will be terminated by the end of the five-year cooperative plan.
The Organisation undertook a daring venture when it decided to remove the sands that have accumulated over the last forty years. Between June and February 1983, the quantity of sand removed from Hara al-`Arak amounted to 50,000 cubic metres. The work carried out was brilliant, as can be seen in the parks that replaced those sandy hills. The project was for the recreation of both adults and children. The emergence of the Organisation for Civil Cooperation in Mokha (in its popular image) took place on 10 April 1980, when the Cooperative Committee replaced the Organisation for twenty months. Then the government decided to cancel the Committee-based system and to return to the Organisation itself for development.

**The Art of Architecture**

Despite the Turkish bombings and the onset of the pollution flood, followed by famine and plague, Mokha remained a city of mansions (qasr), and its houses did not resemble the houses of other cities. Families, whether big or small lived in castles, each type reflecting the status of its inhabitants. These forms are:

1) The large mansion, such as the Building of the Directorate (al-Nahiya), the building of the Military Headquarters (now abandoned), and the mansion of Abdul-Haqq al-Shar`i in the al-Shazli area (now abandoned).

2) The medium-sized mansion, such as the family house of al-Saqaf near al-Shazli mosque (now it is named Abdul-Daim), and the house of al-Mukhadi (al-Shazli region).

3) The small family mansion, which consists of a one-storey house, and has its own conveniences, and is covered with some modest engravings.

The fact that there were few windows in Mokhan architecture indicates that the temperature at that time was not as high as it is today, for the city was surrounded by trees. The houses were built close to one another. On the south side of the house all the windows were closed, indicating that the southern exposure is sunny and windy.
This is the opposite of what occurs in Sana'a, where doors and windows are placed on the south side but closed on the north as a protection against cold winds. After Mokha had been totally destroyed, people from the country-side started to settle there, together with others coming from various parts of Yemen. Those who had money built their houses according to the accepted style, but the poor set up traditional dwellings similar to African huts.

Ventilation was taken into consideration. This was done by having small apertures that were 6 centimetres in breadth and 70 centimetres high. This allowed for a cold draft to come in, and air was constantly renewed.

The mausolea that were spread all over Mokha, those that remain of the three hundred mosques and the al-Shazi mosque, all attest to the different types of architecture, to the style of engraving on the walls, and to the excellence of domes that were designed for ventilation. Examples of these mausolea were the al-Shazi mausoleum, al-Said Hatim mausoleum, al-Amudi mausoleum, al-Sheikh Sadik mausoleum, al-Sheikh Gawahir mausoleum, Sandal mausoleum, and others. Examples of mosques and places of worship are the al-Shazi mosque, al-Maghibi mosque, al-Hamam mosque, and others. We also might include here some of the towers and archaeological remains, such as the al-Amudi towers, al-Tayyar tower, al-Hajana tower, al-Kazakhana tower or al-Furtha, and the cereal mills for the use of the army.

**Influence in the Region**

In the period between 1934 and 1939 large numbers of Yemenis emigrated from Mokha to 'Asb in search of a better standard of living. They went by sea in locally made ships. The Bizili camp was like the mouth of a volcano swallowing in all these Yemenis. They worked under a shower of bombs and shots fired from the planes of the Allies. These planes took off from Aden and used to fire at Yemenis working on the 'Asb-Kampoleha route leading to Addis Ababa, Morocco, and to Asmara in the north.

These were years when Yemenis used to escape from taxes and from the hard life they were leading by passing through Mokha until they reached 'Asb, where they descended in the region of Cape Gambo. This escape was prepared by using loading boxes that were sailed off in broad daylight from Mokha. It was led by a Yemeni merchant named Abdul-Audan, who succeeded in making thousands of workers enter the Bizili camp. They were recruited either for arduous work or for the fascist army. It is extremely important to come back to this difficult period in Yemen's history so as to review the mass emigration that took place in such a shameful manner.

Some people fled to the forests in the west, where it was possible to earn a living by engaging in agriculture or trade and where there were no taxes and no military dangers. So the third Yemeni emigration began to expand in such a way that some of them even joined the ranks of those fighting for the revolution of Haile Selassie. They even used their camels and carried equipment on their backs, provisions and weapons from Djibouti to all the other regions in Ethiopia. Some Ethiopian extremists have called the newborn Yemeni "the son of a camel breeder", an insult. But now this meaning has disappeared as the newborn Yemenis are now Ethiopian citizens who enjoy full rights of citizenship. Those immigrants who were pushed by fate to die or to become strangers did not feel the urge to go back to their original homes. Both the Eritrean and the Ethiopian peoples welcomed them and treated them on an equal basis because historically they were united with Yemen for long period, and they were conscious that both people complemented one another. In the last period, however, it was the Ethiopian authorities that banned their relations and broke off the first maritime ties between the cities of Mokha and 'Asb. It is also true that one can find members of the same family on either side of the Red Sea. This measure was taken to control the attacks launched by the Eritrean Liberation Front.

The Yemenis went in increasing numbers to Eritrea when the Italians were there and took it as a second home. Much was done in 'Asb, as Yemeni merchants built mansions rivaling those in Mokha for their beauty and their paintings. During the years 1933–41, mansions were built on the southern coast of 'Asb for Yemeni merchants, such as the houses of Ahmed Saigh and Kathir, but they were demolished in 1958 when a road was built leading to the new port of 'Asb.

The Italian authorities had already decided to consider big 'Asb the headquarters for the whites, small 'Asb for the Arabs, and Har'a Inkala for the Denkals, who are the original inhabitants of 'Asb. As for Camp Sudan, it was named after the entry of British troops in 'Asb in 1943 and after this region was made headquarters for the British foreign troops, the majority of whom were Sudanese and Kenyans as well as a few Arabs and Indians. As for the northern and southern areas, they were the headquarters of those who came from the upper regions of Ethiopia and Eritrea. The palace, uninhabited until 1958, is considered to be an architectural miracle, and it will continue to stand as a witness to the influence of Yemeni civilisation and culture on both the Eritrean and Ethiopian coasts.

Despite the return of the majority of Yemeni families to Mokha or to its suburbs, the Yemeni influence in 'Asb can still be seen, for they have left their children and their houses behind them. On this African coast, it was the Yemenis who planted palm trees and built huge gardens in which they planted fruits and vegetables native to Yemen. Some of these gardens, belonging to ancient Yemeni families, are still there.

In 'Asb Yemenis held various positions during the Italian occupation that lasted until 1944, during the British mandate during the period 1944–52, and during the
Ethiopian presence since 1952. They could, for instance, be qadis (Muslim jurists). But, immediately after the Yemeni Revolution, the imperial government started to study developments on the eastern coast next to Eritrea.

Two weeks after the Revolution of September 26, Ethiopia declared the dissolution of the Eritrean parliament on 10 October 1963. Thus the Eritrean flag was removed and Eritrea was to be considered from then on as a province under Ethiopian supervision. Furthermore, the mandate of Muhammed Ali Ghaleb, the Qadi of ‘Asb, was not renewed, a further step to eliminate the Yemeni presence in ‘Asb.

Before this was done, Yemeni workers who held office in the civil service or in the police force were removed from their jobs. This opened the way for the repatriation of Yemenis. Having enjoyed twenty years of stability, now Mokha has the duty to build itself once again and to prepare the way for a meaningful future and a decent life for its people.
While we deliberate on questions of tradition and modernity, we should recognise that implicit in our concern is a certain value system particular to the western educated elite. In the field of architecture, this implies the views and values of the "professional" architect. This should be a grave matter for those of us who are concerned with the quality of architecture in the Muslim world, because much, if not the great majority, of our buildings are not "designed" by "professional" or "legitimate" architects. Yet most of our evaluative processes are "programmed" to reflect only the values and views of the "legitimate" architect. Of course we look at buildings designed by "non-professionals", but we do so with the bias of the educated professional elite.

To better evaluate contemporary architecture in the developing countries we must look for ways in which we can become responsive to the views and criteria of other people who are actively engaged in shaping our environments — traditional craftsmen, bureaucrats, politicians, soldiers, contractors, and the average architect. To hear their views, we need to meet them on their own territory.

It is with this in mind that I have put together the following presentation. The idea was to look at a project with the persons responsible for key design decisions and to record on tape their explanations and reactions to the finished product. Also, to use the same technique to record the reactions of the users and the other participants (such as contractors or craftsmen) in the process or transformation. The questions asked were simple, designed to solicit views indicating perceptions of, and values attached to, tradition, modernity and development. My questions to Arabic speaking respondents and their answers to me were translated through interpreters.

Two rural areas were the new settlement of Sharara, outside Amran, near which a large cement factory has recently been established; and Ashmūr, where a new road is making an impact on traditional life. In both settlements we were told that the most obvious changes taking place in rural architecture were the result of the desire of nuclear families for separate homes and their new non-agricultural sources of income. The urban projects in Sana'a included the building of the Ministry of Public Works, the Revolution Hospital, the prototypcal mosques of the Ministry of Municipalities, the Agricultural Credit Bank, and three projects constructed by the contractors Yicon Limited. Individuals involved with the urban projects cited new sources of income and the Revolution as major factors determining recent development. There was a consensus that Yemeni traditions in architecture should be maintained, though integrated with new techniques and materials.

The persons interviewed included farmers, workers, technicians, architects, engineers, a contractor, a master mason and a qādi.

The Interviews

In Sharara, a new rural settlement outside Amran. This interview is with Mohammad Nagui, a soldier-farmer who is drilling a well. We asked him about the changing pattern of rural settlement. Our interpreter is Zohra, an Algerian engineer working on rural drinking water projects in the area.

This is a ten-year-old settlement. Most of these people come from Amran into their land. It's their land. I mean for centuries it's been their land.

They used to live inside the town, and now they have the tendency to move out all the time and live next to their fields and next to the wells. But one of the main reasons now is to leave the houses where five or six families are living at once. You know, sort of multi-type families. These are nuclear families with a house and wife and kids.
It’s not an increase in the family size, it’s just a desire to live another way — breaking into nuclear families.

The only thing we have changed is the fact that the people are not that much dependent on agriculture as they used to be. Before, now the only source of food was local agriculture. So the poor man could come and work with somebody on his land and he would get food. If there were wealthy people, they would have granaries. But if it was a bad drought period, they would distribute it to the people, and when agriculture came back, better, they would balance it. That was the basic value, but now it is not practised this way.

For example, this man owns a lorry. I guess he has been working in Saudi Arabia, and he bought a lorry there, now he is transporting petrol between Saudi and here. This other man works with pumps actually, installing pumps, but he believes in this village. And I myself am a soldier and officer. And these people are farmers. But one is the supervisor, foreman, in the chicken factory.

In the mountain area of al-Ashmur. The following remarks were recorded in the house of Mohammad Saleh Nagui. A number of villagers are gathered for a qat session. We ask about the ways in which the area has changed.

The road is the main thing! It has brought projects — schools, health centres, and eventually water projects.

The major difference is that Yemen used to be self-sufficient in agriculture, nothing was imported. Now people have left agriculture and they are going to work outside. When the agriculture is not sufficient, they have to buy food from the suq.

Life now is better. Especially the old man says that before they used to starve at times. But now everybody has got enough food.

One thing is that we can buy more. People have cars... The other man says that before they were also packed all in one house. And now they have sufficient money to be able to build their own houses and live as nuclear families.

The main development and improvement in construction is from the income from outside the village. People going to work — even for the government as soldiers, or going to work in the Gulf countries — they can afford to build houses that the people who live only from agriculture cannot afford. They have still to stick to the old traditional ways. The owner of the house decides where he wants to have his kitchen, where he wants to have his room, and the size and things like that. And the mason, he just has to execute.

Ministry of Public Works Building, Sana’a. A meeting has been arranged with Usta al-Haj Ali Muja’d, an old master mason; Qadi Abdul Malik Sa’ad Iisr; and an intellectual whose name was not recorded. We asked about the factors responsible for recent developments in Sana’a and their views on the nature of future developments in the city. The official in whose room we are meeting acts as interpreter. There are different factors that called for expansion outside the previous city walls. Among these factors are the migration of
people from different parts of the country; the increase of the families and their need for space; and the income that people started to acquire more than they used to have in the past. This has encouraged the idea of going outside the city walls.

The Revolution! The Revolution has affected all phases of our lives, giving opportunities to everybody. There is no more tyranny. The Revolution started to encourage local investment, trade started to flourish with direct contacts with the outside, and education started to push through. There were no schools outside the main town, so villagers started to look to the city as the source of education. People started to go from the old town to the outskirts, to the suburban area of Sana'a. So the Revolution has played the major role in the extension of the city.

Because of the limited income of the outsider, if he comes he may find it a bit difficult to live in town: no jobs available either with the government or with the private sector. So he is much better off staying where he is rather than coming here.

With the limited income and the availability of cash in the past, people used to extend very little. Where they are, they may add one room here, one additional bathroom because a son is getting married.

If there is any future urban extension to be made, we prefer this extension be made taking into consideration the Yemeni architecture.

However, the whole planning, the plans of the city, will have to be changed. It shouldn't be the same as it is. You have to have new streets. I mean different streets from what we used to have in the past, because in the past these streets were made for walking, for mules, for camels, for donkeys—not for cars. Now the new city needs wide streets because now we have about 100,000 cars inside the city. We need more streets, wide streets.

The new plans should not follow the old type of design, but the Yemeni styles of architecture will have to remain. We do not want to lose that. We may use some mate-
rial, we may introduce some materials — for example, concrete ceiling, beams and so on, and we may tie up stones together with concrete; but we can’t afford to lose the basic Yemeni styles. We are proud of the Yemeni styles and we would like to keep them.

Ministry of Public Works, Sana’a. We interview Abdullah al-Shardhi, head of the building department. We ask about the changes that have taken place in Sana’a, and about the Ministry of Public Works Building itself where we are sitting. The interpreter is a young officer of the Department.

Extension of buildings — this is the first. Roads, major roads, paved and asphalt roads; also the extension of services to local people — social services, including transportation, health centres, educational services, and so on.

For example, there was only one hospital, and now there are more than five hospitals. And also the schools — now we have more than one hundred schools, I think, in Sana’a, as well as exhibitions and markets.

The most important thing that happened during the last five years: the government buildings. Before that, most of the government officials had no offices to work with, and in this period the government created many buildings for the officials. Also, for the tourist, many hotels were created during this period, for example, the Sheraton Hotel and the Taj Sheba Hotel. These are the main criteria of development.

The worst thing was the absence of planning, for roads and for buildings. The greatest difficulty that all planners face here is that there is no cooperation between the citizens and the planning team. Sometimes the people cannot accept planning. This is because of the ignorance and the rapid development of the capital. For example, the Ministry of Municipalities determined some areas for planning, and the areas are to be for commercial centres, recreational area centres or shopping centres. But the people of that area began to make new things, not in accordance with the plan.

A new construction in Sana’a using precast floor height panels.
Photo: K. K. Mumtaz.

Children in Sana’a.
Photo: C. Little/Aga Khan Awards.
In the past there was no coordination between the citizens and the municipality. For that reason, the people did not agree with the plans of the municipality. But now, I think, the municipality made some regulations and some plans, and the people coordinate or are obliged to follow these regulations. Sometimes there was no coordination because there were too many organizations. Sometimes the municipality did not coordinate with the YGEC Corporation for electricity and for communications. For that reason, somebody made roads, and after that the others come to make telephone cables, or something like this. Now, I think this is prohibited, and all the organizations work together to prevent this from happening after the roads have been paved or asphalted.

All the plans for the Ministry of Public Works Building were prepared by our department, by Mr. Abdullah and other engineers who worked together. In that period there were only three engineers. When we designed this building we designed it as a modern building, so we made it a framed structure. From the aesthetic point of view, we wanted the facade to be made of masonry in the local traditional way of building. For that reason all the outer walls are only just covering, not bearing walls. They look like bearing walls, but the main building is a frame structure — column, beams, slabs structure. And the internal partitions are from the local brick, mud burnt brick. In this way we combined the modern type of buildings and the traditional way of buildings.

The elevations were prepared by engineers, and, at the same time, they made use of the local masons who have experience in the traditional way of building. So it is a mixture between the engineers’ design for the elevations and also the ingenuity of the masons to create this.

Look at the modern buildings here in Sana’a. For example, the Yemen Airways building needs maintenance, and at the same time it costs more than these traditional ways. But these traditional buildings do not need maintenance. Sometimes the rain will wash them and make them look better.

The traditional buildings are more durable than the modern types. For example, the Friday Mosque here in Sana’a is nine hundred years old, and most of the traditional buildings here in Sana’a are more than two hundred years old. They are still alive up to now and they are strong. But the durability of any modern building here will not exceed thirty years.

These traditional types of buildings are designed here in our department. This is one reason. And the other reason, all the local people like these type of buildings, it’s accepted. When they see a new building they will not accept it.

Ministry of Public Works. The Design Office. Mr. Hatim, the young architect explains why an Indian architect’s design for a monument was not accepted.

I think the Yemeni architect can appreciate what is the history behind it, what is the idea of it. Also, he can clarify the idea more than any foreign architect.

The Revolution Hospital. We are looking at the new residential block, designed by a German architect. We talk to some steel fabrication workers about the new architecture. Jon Bjørnsen interprets.

This is the Revolution Hospital. We don’t really want any of this. This isn’t going to work. We have better materials; we have the stone. These are factory-made bricks, burnt. I don’t trust the material. Within thirty years the material will give. We know local brick, whereas this one, it’s new. We don’t know what it’s worth.

We ask what foreign architects like us should do.

Give us what you like to do in your own home. (But another person has a different opinion he wants Yemeni-style construction.)

Ministry of Municipalities. Mr. Casida from the Philippines, is chief architect. We ask him about his design for a mosque. Yes, I designed this mosque. If you slowly analyse some elements of design in here, and Yemeni architecture, you can extract something from it, especially from the chimneys of rural houses. That’s why this structure is shaped like this. Even this stone ornamentation. And this gamaria is part of Yemeni architecture. I think because we have good structural engineers, we found no problems, especially on structural design, long spans, and columns. This column spans about seven metres.

First I have to make the preliminary designs, then they have to review the plans and approve them. But most of the time they give me the freedom to design.

Actually, I’ve never heard any comments on the design. As a matter of fact, they tried to admire the design because I’m trying to modernise these simple arches and designs from Yemeni architecture. Maybe we can try to break the monotony of these ordinary arches; you can derive other arches out from this form. That’s my concept.

This was the first time I designed a mosque. So I tried to do some research about Islamic architecture and design of the mosque and make some inspections of existing mosques. I also came up with this design, which reflects really Muslim architecture — Islamic architecture, with arabesques.

I think the most important element of mosque design here is the dome. And then these are the qamaras and these coloured stone patterns. I could have designed other shapes for this one, but structurally, perhaps, it would be impossible.

Jon Bjørnsen, a young Norwegian architect, takes us through one of his projects.

It’s traditional, but it’s too low. I used European three-sixty in my ceiling heights, and that’s way too low.

What I wanted to do here (in the central space) was to create an internal garden, and I wanted this ceiling to be open. I didn’t want it to be covered. And I also wanted to have on stone walls with the terrace motif repeated at the ground level — twice, in steps, and with room for plants and a fountain between the two columns, with a walkway around and gravel in the middle because of the rain. But that was all changed.
by the client because he didn’t want the building to be open. I wanted all partitions actually to be wood. It’s probably much more practical to have it aluminium.

Thinking it over, this may have been a little optimistic because it gets very hot. You will want to have a lot of plants grow out there. The Bank specifically asked to have loose partitions, more like office landscape, and during the actual implementation the building got closed up.

There wasn’t any other way to go (other than the traditional facade), and I was very happy about that. The only traditional thing I regret are the “lintels”. The windows should have been pulled in like boxes, more like large holes. The lintels should sit one course lower down. That’s the first thing. But I didn’t want that at all, I wanted no lintel, and just that box behind, and the flowers.

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Hajjah is an example of a town undergoing rapid change due, in part, to improved roads and a new construction industry.

Photo: C. Little/Aga Khan Awards.
Mr. Mezzedini, an Italian contractor talks about new construction techniques.

We have thought sometimes about making some project, some initiative. We have thought about making some little quarters with multi-storeys and some aethetical parameters in the old Yemeni style, but using the new technology, like the "tunnel" system, for economic reasons. The "tunnel" system has precast panels, and so on, and the complete room is precast insitu, like a tube. We have finished now one work, near the Sheraton, with the system. We have completed the first lot that was started by a Spanish company but afterwards went bankrupt. So we completed these 496 units in one year. This idea is from the architect of this company.

The reason is economic. The first project is for 2,000 apartments, so we need some industrial method of construction. It saves money and time.

The problem, I think, is that it is possible to use the new techniques only in the bigger projects, where it is possible to make amortisation of equipment and so on. So we speak about big buildings and about government projects. But for private projects, I think the only way is the adoption of certain techniques by small contractors.

In our housing complex we used a new method of fixing stone with epoxy glue. When it is finished you have the same aesthetic result — very big psychological problem with friends. Also with our partners in the company. They don't like this type of job: cladding instead of traditional walling in stone.
al-Attar

I have the impression that we have been beating around the bush in the last four days. We have heard many lofty expressions, such as Muslim bourgeoisie, values of Islam, the interesting Yemeni architecture, etc. But did you realize that the decay of the old city is increasing more and more? What is the cause? Did you know that old Sana’a does not have an adequate sewer system? How is it possible that we have three five-star hotels and an expanding Yemen Airways, but we do not have essential facilities? Another problem is that after it rains the ceilings of old houses fall in because the houses are in such bad condition. Some villages were completely destroyed by the earthquakes last December—not only because of the intensity of the earthquakes but also because of mistakes in the construction of the houses.

We talked about expanding or creating new urban places and integrating modern technology with tradition. I think we have to now make effective conclusions.

Serageldin

Earlier I made three points: 1) the image of progress, 2) adaptive re-use instead of conservation, and 3) the importance of proper attention to the design of project finance. I would like to add that these same points can be applied to the old city of Sana’a, a marvellous part of the Muslim heritage which is mishandled, unused and sometimes abused! We can start by answering three questions. First, why do we want to conserve the old city? Is it because it is part of the national heritage, or is it to earn money from tourists, or is it to try to improve the living conditions for people within this part of the city? Each of these questions would lead to different answers and different programs, and would bring us immediately to the second question: who is conservation for? If it is for the residents of the old city, then an emphasis on jobs, basic needs and the level of services would tend to precede consideration of conservation and preservation of specific monuments. If it is for later generations or foreign tourists, entirely different answers might ensue. The answers to those two questions would enable us to address a third question, how to do it? Only when we know why we are doing something and who is aimed at, would we be able to design more rationally a how.

As a starting point I would suggest that we conserve the old city of Sana’a both for cultural heritage and to improve the welfare of the residents. And here I would like to suggest that in dealing with urban patterns, area conservation makes the most sense. What we should be concerned with is street patterns, determined by the street alignments and the setbacks of buildings on the streets. Building proportions are more important than facade detail. Variety in the age of buildings on the same facade plays a big role in affecting the character of the place. And finally, street activities are one of the key determinants of an area’s character. These are the kinds of physical dimensions that one should have in mind when addressing the problem of adaptive re-use in conserving the character of an area.

If we try to apply all this to the old city of Sana’a, we have to recognise that adaptive re-use starts with knowing who the residents are today, and what they were in the past and what they are likely to be in the future in terms of social composition, economic activities, income levels, etc. This will give us a clue, not just as to what the present or past economic base of the area was like, but what it is likely to be. The redefinition of the economic base is, in my judgement, the starting point for the rejuvenation of an old city. For the old city must be perceived and understood as an integral part of the larger metropolis. It must have its “function” as a part of the whole. It must have a “niche” in the urban order, as a district of the modern metropolis, albeit a very special district.

In the case of Sana’a it would appear to me from cursory observation that trade is likely to remain important, if not fundamental, to the old city which could become a specialised market area. This would imply the need for key access points; paved, clean streets; good pedestrian and shopping environment. Such developments would indicate in turn a possible trend towards partial gentrification because of the existing continued interest of important families in residing in the old city. Gentrification could be encouraged in certain pockets of the old city, in others it is recognised that a shift in the mix of the inhabitants is likely to continue. But many of the older buildings could be converted to multiple use buildings in the future, and in some ways, there are already signs of such creative re-use. With this in mind a creative plan for the re-use of the old city can be evolved. But by recognising who are the beneficiaries of this program, and emphasizing trade and gentrification aspects, it should be possible to ensure adequate cost recovery of such a scheme with appropriate “cross-subsidy” for the poorer elements in such a fashion that the financing for the whole project remains feasible.

As for our discussion of Hodeidah, it is important to recognise that the Government of Yemen is conscious of the evolving urban problems of Hodeidah and the plight of the people of the Ghuleil area. The project that they have just launched to address the problems of Ghuleil, though simple in conception and design, is noteworthy on two counts.

1) The project combines both site-and-services and upgrading on the same site, using the former as “in fill” to increase the density of the present low-density settlement.

2) The government prepared the project with its own staff (local and expatriate) without resorting to consultant firms—a significant achievement of the institution building efforts made under the Sana’a Urban Development Project.

I am also happy to note that the Hodeidah Urban Development Project will, in all probability, also be supported by the World Bank.
Cantacuzino

Two things stood out on our walk this afternoon through the Old City of Sana’a. On the one hand, the houses were marvellous to look at, comfortable to live in, and adaptable to change; on the other hand, the spaces between the houses — the environment of the street — left much to be desired. His Higness the Aga Khan mentioned the need to find out what the resident population really want before embarking on a conservation program. One also might take the view, not unreasonably, that a government encouraging development on a national scale should also provide the basic infrastructure for a city like Sana’a. and that this would go a long way towards persuading the resident population to remain there and look after their houses.

Abdalla

It has been recognised that sacrifices were inevitable in the quality of some buildings designed and constructed by foreign architects/contractors after the revolution. But there is a real danger that such sacrifices may continue to be made in the absence of local professionals who are fully versed in their own history and their architectural and planning heritage. The only way to shorten the period of sacrifice is through the training, in sufficient numbers, of local personnel who would be capable of not only undertaking development tasks themselves but also supervising and controlling the work of foreign designers and builders with a view to ensuring preservation of Yemeni traditions.

Kulkarni

In his surveys of the reactions of people in Sana’a, Kamil Khan Muntaz found that people love to see old materials of construction used in buildings. In my opinion, it is not only the scale of architecture but the building materials as well that are important in preserving traditional ways of construction. Incentives and vigorous steps should be taken to improve the quality and increase the quantity of indigenous building materials. If sufficient quantities of these materials are available to private builders, whose efforts in housing outnumber those of the government, then traditions will be automatically preserved. One of the ways to achieve the aim of the seminar is to encourage the development of local building materials.

Ibrahim

Listening to the fears and concerns expressed by Mr. Muntaz, I recall Charles Dickens decrying the ugliness and misery of the nineteenth-century Industrial Revolution or Kafka decrying the sterility and impersonality of the twentieth-century bureaucratic revolution. Most of the Yemenis interviewed by Mr. Muntaz lamented the loss of pre-revolutionary self-sufficiency of food and the peaceful containment of an orderly urban and rural life. Yet in the same breath these Yemenis condemned the pre-revolutionary past for its tyranny, despotism, isolation, and darkness. They are thankful for the revolution that brought them to the twentieth century, provided them with education, health, electricity, and broke down the walls of isolation.

I have no doubt that these Yemenis were expressing genuine feelings and a state of mind. But it is a state of mind that is replete with ambivalence and contradiction. Many of us at this seminar, despite all our articulation, suffer from the same ambivalence. We have to come to grips with the realities of “price” and “trade-off”. We can’t “have our cake and eat it too”. I am asking both speakers and other members of the seminar to face the harsh fact that there is “a price” we must pay.
A municipality is launching a programme for its own development in which it wishes to take account of new areas to be developed and old ones to be upgraded. It intends to undertake a pilot programme which will include some new areas and the upgrading of some of the existing urban area. If the pilot project is successful, it would be used as a model for all future development.

The municipality articulates the following objectives for the pilot project:
1) To provide for the expansion of the urban population, for needed re-location within the urban area and for improving the conditions of the resident population. This should be done in a manner which achieves full cost recovery with respect to the project as a whole, taking into account continuing as well as first costs;
2) To open up a wider range of housing choices than available at present for the full range of the urban population;
3) To provide for the upgrading of all aspects of the physical environment of the most culturally valuable parts of the existing city;
4) To provide for an architecture in the new areas which is based on the cultural values as well as the building traditions of the people;
5) To maximise the use of local resources, technologies and skills; and to maximise the economic return to the local population;
6) To maximise the role of the local population in shaping their own environment and controlling it over time;
7) To make judicious use of foreign personnel, technologies and financing;
8) To propose a managerial frame for proper planning, implementation, administration and regulation of the physical, social and economic aspects of development.

The tasks for the workshops are:
1) To review and if necessary re-define and modify the above objectives;
2) To specify the scope and content of the services that the consultants would have to provide in order to guide the municipality with respect to its pilot project;
3) To describe how such services might be rendered and what the disciplinary mix of the planning team should be.

The workshops were organised in three groups, which met separately and each of which prepared a summary of its deliberations.

The first workshop group divided the task into two projects, choosing to consider the upgrading of an existing area and the development of a new one as separate problems. With respect to the existing area, they, in the words of their chairman, made the following recommendations:
1) Surveying existing conditions with emphasis on architectural types, Yemeni decorations and methods of construction.
2) Conducting a socio-economic study of the area with special attention paid to reasons for the decline of old towns and their economic base.
3) Establishing a community centre to educate the local population and to create an awareness for the need of upgrading and conserving old towns.
4) Establishing a building research station to study methods of upgrading building materials, maintaining old buildings and building new ones.
5) Organising the Building Research Station along with a social centre so that they serve as places for exchange of ideas between the local population and consultants in order for the latter to understand better the needs and problems of the former.
6) Carrying out studies to determine ways and means of strengthening the economic base of the community.
7) Establishing standards and developing better methods of building, installation of plumbing, sanitary equipment, wiring and other finishing materials.
8) Upgrading public utilities and garbage disposal.
9) Setting building standards and drafting regulations that are consonant with the living environment so as to ensure the maintenance of traditional Yemeni architecture.
10) Making a plan providing for open spaces, recreation facilities, playgrounds, schools, shopping and pedestrian and vehicular movement.
11) Phasing the plan.
12) Using the information media to inform, educate and encourage the participation of the population.
13) Establishing the means of financing.

With respect to developing new areas, the following recommendations were made:
1) Evaluation of newly executed urban projects with a view to determining what lessons could be learnt from them.
2) In the selection of the site, consideration should be given for sufficient space to allow for a self-sufficient community with its own economic base.
3) Undertaking studies to determine future socio-economic trends of the potential inhabitants.
4) Involving the population in the planning process.
5) Establishment of new standards and regulations for buildings.
6) Preparing a master plan.
7) The phasing of the plan.
8) Establishing means of financing.

The foregoing proposals and conclusions were not found to be entirely adequate, and the following additional recommendations were made in a report drafted by Fernando Varanda.

With regard to the upgrading of the old nucleus:
1) include in the usual survey of existing conditions an architectural survey, case by case, of all the housing;
2) provide information to the municipality and tenants on how to implement the recommendations for rehabilitation, adaptation or conservation;
3) promote an educational campaign at the community level;
4) involve community groups in the process, both by encouraging the reactivation of residual structures and by the promotion of new ones;
5) include in the plans means of adapting to indispensable traffic needs;
6) establish a programme of financial benefits favouring initiatives for upgrading the old nucleus.
With regard to developing new areas:
1) include in the criteria of the plan reasonable levels of density;
2) encourage dwelling units with the capacity to evolve in height;
3) create local technical bodics advising and monitoring construction activity;
4) establish training procedures for these bodies that emphasize the understanding and perpetuation of the cultural values.

The problem of financing was discussed along two lines: one, profiting from the local and municipal taxes; the other, assuming some form of external aid to local administration both at the municipal and sub-municipal level. This aid could be provided by the central government or financial institutions. At the municipal level should be created a financial organisation that would provide mortgage subsidies by absorbing a part of the interest. The costs of this benefit to the tenant ought to be borne by local taxes and additional revenues generated through the promotion of local economic activity.

The members of the second workshop group approached the task with a view to providing a critique of the problem as formulated rather than specifying the services expected of the consultants. Despite differences within the group, it was generally agreed that the eight objectives listed were far-reaching and comprehensive. But, members found it necessary to include a ninth objective, namely,
- To provide a full range of social services to match the needs of the population in an integrated manner and within an agreed timetable.

The formulation of the problem and the objections articulated were found to be too general. Members of the workshop stressed that it was essential to be more specific in order to approach the problems realistically and in concrete terms. Without focussing on a specific municipality with particular strengths and weaknesses, and without taking into consideration a specific site and a population with particular characteristics, the task would remain too academic and abstract to be valuable.

However, due to the constraints of time, an in-depth analysis of a particular site could not be undertaken.

The members of this workshop would have also liked to see a more precise wording of the objectives. They felt, for instance, that phrases such as “improving the conditions of resident population”, “a wide range of housing”, “maximising the use of local resources”, and “maximising the role of local population” were too general.

In the course of the debate, it was proposed that no specific output in response to the workshop programme would be produced and that a general debate on the issues raised would be appropriate. The workshop then considered the following questions:
- Is the municipality the sole initiator of such a project? Should the municipality retain leadership throughout all phases and act as the project implementer?
- How could local participation be obtained? How can outside professionals help articulate the aspirations of the local people and help the local people to understand the issues involved?
- Can the local population be made to contribute to architectural design? Can they be made to have an influence on planning decisions or on the actual creation of architecture?

The use of the terms “foreign personnel” and “consultants” was questioned in view of the fact there is a wide range of sources available for assistance and that it is desirable to promote the participation of local consultants. The general terms, “extending assistance”, was proposed.

Also questioned was the concept of a “pilot project”, which implies a search for an ideal solution and points to all the dangers of such a search. In reality projects are often undertaken as a result of politically motivated decisions with an inade-
quate data base and with inadequate time for planning and implementation. Any pilot project must be designed with these constraints in mind. However, it is even more important to ensure a good "feedback" from one project to the next rather than spend too much time and energy on any one project, whether it is a pilot project or not. It was therefore recommended to move fast, monitor results carefully, and incorporate the experience into the next project as a continuous process. Such a process is more likely to develop a living tradition of evolving urban form than a single pilot project.

This group felt that the workshop had been successful in enlarging the participants' knowledge and understanding of the problems, despite the fact no specific outputs were produced.

The third workshop group expressed the importance of establishing a context for the project. (For purposes of discussion, they chose the municipality of Sana'a.) They felt that the objectives articulated were conformist, failing to tap the real resources of local population. The overriding concern of this group was determining genial ways to best release the creative energy of a community in the development of their built environment. Therefore, they approached the objectives with the view of making a priority list.

The first objective was accepted as the main objective, however, it was broken into three components:
- to provide for expansion of the city in order to accommodate the growing population;
- to improve the physical environment in such a way that it enhances both the life of individuals and the community as a whole; and
- to establish a mechanism for cost recovery at all levels: community, city and region.

The second most important objective should be to maximise the use of local resources (number 5 as given). Furthermore, it was held that when the active and genuine participation of the community is realised through a sympathetic structure, the remaining objectives would be accomplished naturally.

The mechanism for participation was elaborated. Two factors were cited to guide consultants in setting up such a mechanism. First, tasks should be defined relative to the community's ability to participate. Second, the master plan should be communicated in such a way as it is understood by the community. This requires the consultant to understand in turn the rule system and processes which constitute the structure and operation of local traditions.

It was proposed to create an organisation, whose membership would be comprised equally of professionals and community members. Specialists in communications would also be included. This organisation would formulate and implement the master plan.

Two participants, Manfred Wenner and Hasan Uddin Khan took issue with a number of recommendations made and conclusions reached in the workshops and entered a dissent. Their first criticism was that no real cognisance of Yemeni conditions and circumstances taken into account in the discussions. For example, given the nature of municipal government in Yemen, they thought it would be unrealistic to promote freely local participation, since such efforts might be viewed with suspicion.

Secondly, they criticised that no specifics on the means and outcome of public participation were elucidated:
- Who determines which decisions of the people would be acceptable and which ones would not?
- What are the criteria for making such determination?

They recommended that workshops had to be situation specific since generalisations could lead to unrealistic and counterproductive plans of action.
Concluding Remarks

What We Have Learned

William L. Porter

Your Highness, distinguished guests and participants, our Yemeni hosts. Yemen’s great building tradition and the stimulation of this seminar inspires me to go beyond merely summarising to make a number of recommendations including one specific proposal. I have tried to take account of the contributions of participants at this seminar without pretending to represent their views. And I have benefitted from the collaboration of Sherban Cantacuzino and Kamil Khan Mumtaz during the preparation of the workshop and in later discussions.

To revitalise Yemen’s great building tradition for the modern age, it is even more than the “guerilla warfare” mentioned by Professor Ibrahim that is called for. The six recommendations that follow are intended to outline areas for possible action by countries with especially valuable architectural heritages. These recommendations are put forward with Yemen in the front of my mind. They would touch many places in society and would call for a major and continuing commitment of the nation to place building in the vanguard of cultural expression. This is an opportunity especially evident here in Yemen. They are put forward as a first approximation to illustrate the types and range of recommendations required to make an impact on environmental change, but with the idea that, if considered here in Yemen, they would be very much revised and expanded.

Finally, they are put forward with all the limitations of my own background and experience, and without having sought a consensus among all of you.

The recommendations indicate that values must be articulated, that high priority must be given to upgrading the existing environment, that new building must take account of and be in scale with a society’s capacity to build and to absorb new building, that human resources must be mobilised in many sectors of society, and that a system of checks and balances must be developed to work with new initiatives for building. The last recommendation is that a National Institute of Building Arts and Sciences be created to provide guidance for the process of relating building to contemporary culture.

The first recommendation is to articulate the values of society that impinge on the physical environment. This would entail articulating:

1) a conception of development that incorporates cultural as well as social and economic ideas, that incorporates both existing environments and plans for new environments, and that incorporates ideas of both tradition and modernity;
2) acknowledgement of the extraordinary and extraordinarily individualistic character of the existing architecture, of the widely distributed pattern of settlement and the need to reinforce it; and of the
many sources of initiative in the society
and the need to sustain them; and
3) a framework of concepts and values
that links architecture, settlement patterns
and societal initiatives for the purposes of
future development.

The second recommendation is to place
high national priority upon upgrading and
maintaining the existing environment within
the context of values and information
established under the first recommendation.
This would entail:
1) early identification and analysis of crisis
and potential crisis situations and the ini-
tiation of actions to remedy quickly at least
a few;
2) mobilisation of financial support and
creating permanent mechanisms to sustain
that support for upgrading and mainte-
nance;
3) mobilisation of appropriate materials
(as Professor Lewcock stated: "That it is a
principle, and one which ought to be rec-
ognised by all governments, that the
maintenance of the provision of the appro-
priate materials for the economic repair of
the existing built fabric is at least as impor-
tant as the provision of cement or the
importation of new materials.");
4) formation of active clients for both up-
grading and maintenance of the physical
environment from within the existing com-
munities; and
5) establishment of technical assistance
programmes to aid in devising appropriate
solutions and to aid in the ongoing admini-
stration of environmental maintenance.

The third recommendation is to achieve
continuity of cultural values and of the
traditions of building in new urban and
rural extensions or infill. This would re-
quire:
1) ensuring that the scale, location and
timing of projects be in keeping with the
size and scale of community groupings in
society;
2) ensuring that the scale, location, timing
and character of projects be in keeping
with society's own capacity to build, which
might imply smaller and slower projects
than currently planned;
3) ensuring that the control of develop-
ment and the administrative mechanisms
be, wherever possible, in the hands of the
communities and other groups most
directly affected;
4) looking well beyond mere mimickry of
past forms in seeking new formal expres-
sion in architectural and urban design; and
5) acting early to bring some projects into
this new frame of reference.

The fourth recommendation is to mobilise
human resources from within the society
for building. The nation's leadership would
have to
1) cultivate an informed clientship at local
levels, possibly through local development
authorities, by aiding local groups to form
effective clients for building, identifying
real clients wherever possible for new
building, creating surrogate (or substitute)
clients for new building if actual clients can
not be identified, giving technical assis-
tance to clients, and educating future
clients in schools and universities;
2) encourage culturally sensitive building
professionals, give them appropriate in-
centives, re-educate existing building pro-
essionals, and educate new ones ("Building
professionals" include designers, con-
structors, craftsmen, developers, adminis-
trators, etc.);
3) educate financial managers to become
more supportive of culturally sensitive
building; and
4) reach out to the public at large with
information and ideas about the signifi-
cance of a great building tradition.

The fifth recommendation is to devise a
system of checks and balances within
which building occurs. One would have to:
1) articulate national and possibly regional
policies for culturally sensitive building;
2) create norms and standards that could
be flexibly administered by national and
local building authorities;
3) modify existing criteria of financial
institutions to become more responsive to
cultural as well as economic criteria;
4) mandate local clientship for all building projects; and
5) establish mechanisms for mediating possible conflicts in situations where interests of many groups are at stake.

These first five recommendations, even if implemented, need a continuing force in society that could give imaginative leadership to the underlying goals of re-establishing Yemen’s great building tradition and bringing it into a close relationship with Yemen’s contemporary life and cultural values.

The sixth recommendation is a specific proposal intended to provide that force. It is to establish here in Yemen a National Institute of the Building Arts and Sciences to be composed of very distinguished members of Yemen’s society and to include people drawn from both the public and the private sector not in the field of building as well as members of the building professions themselves. Their mandates would be:

1) To articulate a philosophy for building, for example:
   • to link an understanding of the history of the society to contemporary environmental change;
   • to link intellectual and cultural values to building;
   • to take responsibility for recommendations such as those outlined in the first recommendation above; and
   • to make specific recommendations, when requested, to agencies of government, such recommendations to form the basis of selected policies of those agencies;
2) To undertake research, for example:
   • to document existing architectural and urban forms;
   • to investigate architectural and urban form and to explore linkages with legal, administrative, political, and other systems of society;
   • to test ideas in building (Here let me again quote Professor Ronald Lewcock who argues “that the governments of Islamic countries should give serious consideration to the extension or setting-up of building research stations, with express emphasis being given to the establishment and testing of improved local technologies; i.e., those that are economically and efficiently appropriate to the various towns and regions within their territories.”);
3) To promulgate professionalism through study and recommendations concerning education, training and the formation of professional ethics, standards and organisations;
4) To instigate a program of public professional information on Yemeni building aimed at the building professions and the general public, perhaps including a regular journal of building; and
5) To mobilise the voluntary forces in society, which could contribute to the formation of new, vigorous, and culturally responsive ways of building, by offering their special talents: technical assistance, financial and organisational support, and, most importantly, their inspiration and leadership.

Any liberties I have taken with these remarks may, I hope, be attributed to the enthusiasm of being here in Yemen, witnessing its great buildings, to the seminar itself, and to my sense that something very exciting could happen here — and conceivably in other countries as well.
Concluding Remarks

His Highness The Aga Khan

I would like to begin these concluding remarks by thanking the Prime Minister and the Government of the Yemen Arab Republic for the many kindnesses, courtesies and considerations that have been extended to us. We can all agree that this has been one of the most exciting, one of the most interesting and one of the most motivating seminars we have had. The success of the seminar is in large part due to the support and encouragement which the government has given us in enabling us to see truly exceptional buildings in various parts of this country.

Each of the numerous site visits we made highlighted the same problem which the workshops identified unanimously and which I have observed in other areas of the developing world. Generally speaking, there is a very deep communication gap between decision makers and populations, rural or urban. The reports from the workshops were also unanimous in stating that unless the people were genuinely and continuously involved in the restoration of these beautiful parts of Yemeni cities, there would be very little chance of restoration being successful. In my mind this is now an established fact.

The second issue which I retained from our deliberations is that the Third World is still facing an economic crisis and governments cannot treat conservation as a priority. As a result, conservation — the maintaining of cultural heritage — has to make economic sense. If it does not make economic sense, there is little chance for all of us who are concerned with the heritage of the Islamic world to be successful. These I think are two basic considerations for any progress that we wish to make.

However, it would be wrong to conclude by looking at problems only. There emerged in this seminar an idea of a pilot project for which Dr. al-Attar must be credited, having mentioned it first in his opening speech. He envisaged an institution, an organisation of some form, which could take upon itself a pilot project on urban design in the Islamic world. This project would involve the support of the country concerned and of international agencies.

We are just about in the sixth year of the life of the Aga Khan Award for Architecture, and at the end of every seminar I have faced the same question: how does the Award intend to continue to support actively the purposes which it has set for itself? I cannot commit myself to an answer immediately because this is not the sort of thing I would do without the support of the Steering Committee. But I think there may be a chance of putting together an international organisation which could build on the lessons of this seminar. Perhaps, this organisation would be a non-governmental one which would work with UNESCO and other agencies and try to become effective in mobilising people for looking after exceptional parts of these old cities. This role, I think, can best be played by a private sector organisation, a non-governmental body, and it could be very exciting.

I am convinced, as a result of this seminar, that while each urban area, each case is different, the basic problems are common to all areas. The two basic problems — that of closing the gap between people and decision-makers, and that of mobilising people in rendering programs economically viable — are relevant whether we are talking about Kairouan, whether we are talking about Fez, or whether we are talking about Sana’a. These two issues have to be resolved if historical sites and parts of these cities are to be preserved successfully. I think therefore that in concluding this seminar it would be fair to say that the government of Yemen, the hospitality which we have received at Sana’a and the participants in this seminar have all contributed to conceptualising what might be the beginning of a very exciting development in the years ahead and I wish to conclude by saying that the Award will reflect over this.