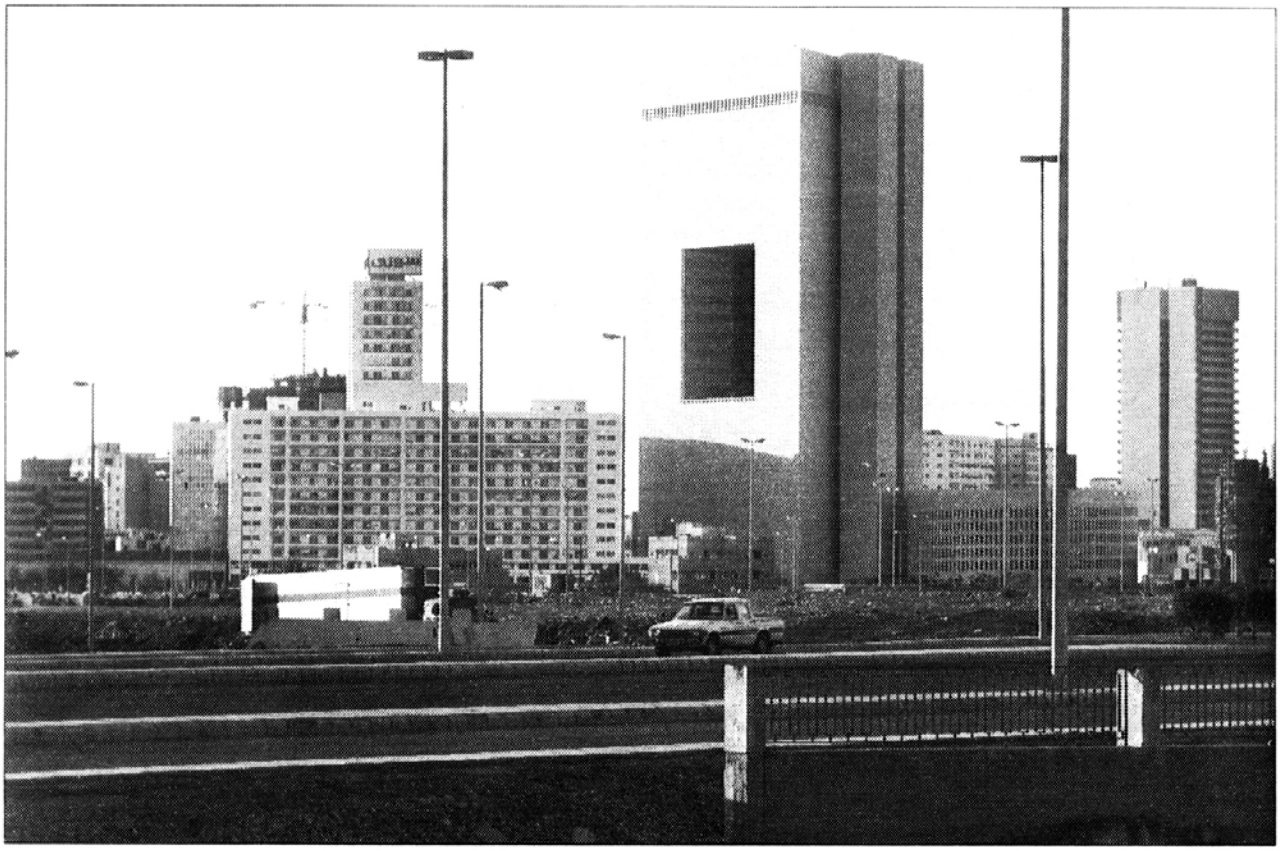
1989 Technical Review Summary
by *Serge Santelli*

0684.SAU

National Commercial Bank

Jeddah, Saudi Arabia



Architect
Skidmore, Owings & Merrill (S.O.M.)
Chicago, U.S.A.

Client
National Commercial Bank
Jeddah, Saudi Arabia

Completed
November 1983

National Commercial Bank, Jeddah, Saudi Arabia

I. Introduction

The building is the headquarters of the bank as well as being a local branch. It contains a banking floor, regional, management and international offices, and an office penthouse for the directors. The design is an international building type with an original solution for dealing with the hot climate. The project was completed in November 1983.

II. Context

The prime objective was to unite under one roof the activities which had previously been divided between four buildings in Jeddah.

Jeddah is located on the eastern shore of the Red Sea. The building itself is situated at the mouth of the Al Manqabah Lagoon. It is bounded to the east by King Abdul Aziz Street and by the Corniche Road to the west. Part of the building is directly connected to the water. Old Jeddah is nearby, just beyond King Abdul Aziz Street.

The site on the fringe of the old town was apparently occupied by the British Consulate, and a fish market at one time.

What remains of old Jeddah is quite picturesque with its narrow pedestrian streets (recently rehabilitated) and its 3 to 4 storey houses. The façades are decorated with very sophisticated *mashrabiyyas*.

a. The Architectural Local Character

The local traditional architecture is very specific, with its cube-shaped earthen houses and beautiful bow windows, connected by wood panels, overlap several floors. It is quite different from the traditional Islamic architecture of the Middle East or North Africa where there is no architectural expression on the façade. In the houses of old Jeddah, the detail of the exterior lattice work signifies an orientation towards the outside world. The houses have no central courtyard. Instead, a central staircase gives access to the different rooms of the house.

The old town has been severely affected by clumsy modern development and changing Saudi social values which associate it with a poorer past. The Corniche lies outside the perimeter of the old town and here the scale of the buildings is much bigger.

b. The Immediate Surroundings

The site is surrounded by large parking lots which serve the new shopping centres and glass curtain wall office buildings; an old mosque, some dilapidated traditional houses, a few smaller parking lots are also located in the vicinity. The resulting architectural jumble is the product of hasty and careless city planning. It bears no relationship to the old town. It is difficult to see how the recent development can revitalise the immediate urban environment, given the present state of affairs.

Across the road in front of the main entrance of the bank is a 19th century building which has been entirely restored. It is the only remarkable historical building in this district.

c. Climatic Condition

The climate is hot and damp. Summer temperatures can reach over 40°C with high humidity (75-95%). The prevailing wind is from the west, off the sea, but occasionally a strong eastern wind comes from the desert and this mixes sand to the damp. In winter, temperatures are regular and pleasant, between 15 and 35 degrees.

d. Access

Cars enter the site of King Abdul Aziz Street by means of a narrow lane which swings around the building to enter the spiral lane which swings around the building leading to the spiral parking lot. Otherwise, one reaches the same street in front of the steps and canopy that lead to the main banking hall. Pedestrians can access the site from the Corniche Road.

III. Description

a. Functional Requirements

The new building had to provide 56'300 sq m of usable space on a site of approximately 4 acres. The main functions were:

- a spacious banking hall to deal with local accounts, with adequate room for executives as well as tellers,
- high technology vaults and security zones in the basement,
- regional management offices,
- general management offices,
- an international division,
- lounges and dining rooms, etc.,
- offices for the directors,
- parking facilities.

b. The Design Concept

In the words of the architects, "the task was incorporating advanced organisation and technology in a building which would be culturally and climatically responsive". The site being prominent, the architects did not want "a background building blending into the existing urban fabric". They considered that a tall landmark recognisable from a distance was "urbanistically appropriate" for the site, located on the edge of the old city and facing the lagoon and the Red Sea.

The guiding ideas of the scheme were formulated by Gordon Bunshaft, a dean of the firm. From the start, he wanted to design a building that would exclude sun, dust, glare and heat, while making the most of natural light and of views up and down the Red Sea coast. After some experimentation with both a courtyard and suspended gardens, he devised a compact, triangular building which was in effect a conventional "glass box" skyscraper turned outside in, leaving the core of elevators as an adjunct tower and the majority of exposed surfaces as masonry. The Corniche Road, which intersects the site at an approximate angle of 60 degrees, suggested the triangular shape of the building.

"Thus the final plan is the amalgamation of two traditions: the modern office building with a flexible floor plan stacked in a tower with a core for services, and the Near Eastern court type with solid exterior walls".

The typical work spaces are located in two V-shaped strips and look out, through grey-tinted glass curtain walls, onto the central triangular courtyard. The courtyard itself is lit by large openings in the blank façade. These colossal openings are monumental loggias which protect the interior wall from direct sunlight and provide a view to the exterior.

The triangular plan accommodates a variety of conditions. The entrance, aligned on one axis, leads to the vast banking hall which takes up almost the entire ground floor, with an auditorium located in one corner. A mezzanine surrounds the central space and is lit by conical skylights which also provide light below. On the first floor are located the lounges, a library, a meeting-room for 300 and the employees' dining room - an executive dining room is located on the 23rd floor. The typical office floor is organised with the private offices against the exterior walls and the open work stations next to the glass curtain wall. The top floor is reserved for executives and contains a board room and offices for the chief executives. This floor is expressed architecturally on the façade by a series of pillars treated as a cornice.

The garage is in a separate building from the tower itself. It is a continuous helical ramp structure. Elevators and services are located in a rectangular tower adjoining the main building. The garage is connected at ground level to the car park.

c. *Evolution of Design*

Working drawings were already complete and work on the foundations had begun when the seaward end of the site came under dispute. The municipality of Jeddah had allowed the client room for access and planting in exchange for some underground parking, but the deal fell through because of political machinations. Work stopped altogether and it seemed for a while that it would never start again. However, Gordon Wildermuth (the architect in charge) re-designed the building using the same basic idea so as to fit it into the reduced lot. As a result, the building looks over the city and not the sea, its main façade being established on King Abdul Aziz Street. The seaward side has the rather blank elevator facing towards it.

d. *Structure, Materials and Technology*

The bank, 27 storey high, is of structural steel with clear spans of 15 metres. Floors are cellular steel decking allowing room for air ducts, electrical ducts, etc. The ceiling of the banking hall is coffered concrete. Main external walls are precast concrete, insulated, then finished in travertine veneer.

Marble is used on the ground floor and polished black granite on the 23rd floor. Otherwise the usual finish is carpet tiles. The curtain wall is of grey-tinted insulating glass, which is bluer over each floor edge. The garage is of precisely finished bare concrete, sandy in colour.

The central air conditioning system is located in the penthouse. The building stands on piles protected by a slurry wall. The foundation conditions are complicated by the proximity of the sea and the corrosive power of local chemicals.

e. *Origins of Technology, Materials and Labour*

A very small part of the materials and labour were local; the steel came from Japan, the marble from Italy, mechanical systems from the U.S.A., elevators from Germany, and the furniture from France. Numerous foreign consultants were involved in the project: Schindler Ltd. for the elevators, Chubb & Sons for the vaults, and Johnson Control for the security system.

The main constructor was Korean: the Samwhan Corporation.

IV. Construction Schedule and Costs

a. *History of the Project*

1975-76	Initial discussions at Bank concerning new building.
1977	Skidmore, Owings and Merrill selected.
	Design starts.
1979	Construction begins (in October).
1983	Construction completed - one year having been lost due to crisis over site.
1984	Building occupied.

b. *Costs*

No cost figures are made available by the bank. It is obvious that there was no budgetary limit set and that the client wanted the very best of everything.

V. Technical Assessment

a. *Functional Assessment*

The banking hall at ground level, the standard office spaces and the top executive offices are spacious and very comfortable. However, it seems that the employees who work in the standard offices located against the glass curtain wall have complained about the lack of privacy.

b. *Climatic Performance*

The fundamental gesture of turning a skyscraper outside in, providing shaded openings, a ventilated core and heat reflective masonry on the outside, has considerably cut down the negative effects of the sun. The spaces are fully air conditioned and the load is 15% less than it might have been. The combination of big openings and a central shaft works well in moving the sticky air upwards. At the top, the air moves rapidly, even on a relatively still day, and the temperature just outside the glass may be as much as 10°C lower than it is outside the building. In fact, the updraft can be too effective: recently during a dust storm, two trees on one of the terraces were uprooted completely !

c. *Materials, Technology and Maintenance*

The main structure is steel, braced to deal with lateral wind loads. Large girders bridge the big openings. The steel is clad in pre-cast concrete, insulation and travertine panels. Joints are extremely fine. The stonework in the floors and the plaza is also of a very high standard. It remains to be seen how well the curtain wall will resist the corrosive atmosphere of Jeddah.

VI. Users

The building houses approximately 2'000 employees and some of its floors are used by the general public (eg. the main banking hall on the ground floor). The social range is considerable - all the way from the cleaning staff and chauffeurs through the middle management level and resident engineers up to the upper echelons of the directors and the owners.

VII. Persons Involved

Client	Sheikh Mohamed Bin Mahfooz (main member of the family involved).
Architects	Skidmore, Owings & Merrill.
Main design ideas	Gordon Bunshaft.
Administration & Realisation	Gordon Wildermuth.
Engineering	S.H. Iyengar.
Mechanical	P.S. Gujral.
Project manager	Michael Keselica.
Project designer	Thomas Killian.
Interiors	Davis B. Allen.
Contractors	Samwhan Corporation, Seoul, Korea (Project manager: B.Y. Park).

Serge ***Santelli***
Paris, 15 May 1989

1989 Technical Review, Local Report
By *Dr. Hossny Aziz Alrahman*

0684.SAU

The National Commercial Bank Building

Jeddah, Saudi Arabia

I. Introduction

The purpose of this research is to evaluate some of the socio-cultural aspects of the National Commercial Bank (NCB) building in Jeddah. Section II comprises a brief outline of the research methodology, and section II presents the findings of this research. Conclusions are drawn in the last section.

II. Research Methodology

The research methodology adopted consists of two inter-related parts. Firstly, emphasis is place on an examination of the NCB building *per se*. Secondly, an analysis of the impact of the above building is attempted. The investigation confines itself to the central area of Jeddah, because it is where the influence of the NCB is most evident. This does not imply that the influence is confined to the city centre only.

Central to this research method is the question of relevant data, particularly in a city, or indeed a country, where (personal) research studies are not customary.

For this particular reason, a standardised questionnaire was developed to capture data relating primarily to:

- the characteristics of the building and general impressions;
- exterior movement and car parks (around the building), and
- compatibility of the building with adjacent land uses and the historic area (the old city of Jeddah).

The questionnaire was designed to be efficient, i.e., questions were concise and written in a simple language (see Appendix). The procedure to answer the questions was very simple and required no more than a tick in the boxes provided on the survey sheets.

Random sampling was adopted to address the questionnaire to a pre-defined number of parties, namely:

- the Bank's employees,
- the Bank's customers,
- the Bank's neighbours,
- the group of professionals - architects, planners, etc.

It is both practical and feasible to adopt random sampling for this survey work, since the sampling frame of the users, neighbours and professionals is unknown; the identification of this frame requires 100% enumeration survey which is beyond the scope of this investigation.

The survey was conducted from 9 to 20 May 1989. The responses received from the Bank's personnel, customers, neighbours and professionals totalled 42, 18, 25 and 15 respectively.

III The Findings

The results of the survey are displayed in Tables 1 - 4. These will be discussed under four headings, namely: the personnel, customers, neighbours and professionals.

The Personnel

Table 1 shows the answers of the bank's employees. It is clear that the overriding majority of personnel believe that the characteristics of the NCB building are outstanding. This is mostly evident with respect to the "adequacy of interior spaces" (83%), "ease of circulation" (93%), "decoration of customers' area (83%) and "general impression" (86%). Likewise, "adequacy of ventilation" (69%) and "lighting" (74%), "decoration of offices" (62%) and beauty of architectural elements in the "façade" (62%) were considered as significant features of the NCB building; however they commanded smaller proportions.

At the other end of the spectrum, the numerous answers which reflect the consideration of the NCB building as a landmark worthy of admiration are not surprising, since the rating of building characteristics was favourable. Whereas three interviewees out of four think that the NCB building is "compatible" with surrounding structures, one out of two believes that the "movement" (vehicular) around the building is somewhat difficult. Moreover, parking space seems to be insufficient (52%).

The harmony of the building with the traditional area and other land use configuration enjoys the support of nearly three fourths of the interviewed personnel. Furthermore, more than two thirds of the respondents think that a "strong link" between the NCB building and the Red Sea (Lagoon) is in evidence.

Banking services (29%) provided at the NCB building are ranked as a significant socio-cultural factor, followed by the view that the building is a "meeting place" (24%).

The Customers

The views of the customers do not fundamentally differ from those of the employees. Nearly all building characteristics, with the exception of the "façade" are considered to be successful. Moreover, three fourths of the customers hold the view that the NCB building is compatible both with its adjacent area (74%) and the traditional area. This lends much support to the view that the NCB building is strongly related to the natural environment (sea). Only exterior movement was rated as uneasy, but parking spaces were thought to be sufficient. When the socio-cultural impact of the building is considered, the "provision of jobs" is at the forefront.

The Neighbours

The response of neighbours are at variance with those of customers and employees, in that the decorative aspect of the NCB building in the "Customers' area", "Offices" and "Façade" were not considered overly successful, totalling some 68%, 60%, 52% respectively. However, the NCB building is still regarded as a source of admiration. The harmony of the building with its im-

mediate surrounding area, the not-too-distant traditional core area and historic buildings is relatively weak. Circulation seems to be problematic (52%), but parking is not. Another additional impact of the NCB building manifests itself in the provision of jobs.

The Professionals

Despite the fact that four professionals out of five consider the NCB building as a beautiful piece of architecture, the actual rating of building characteristics,with the exception of "interior spaces", "movement" and "façade" was not substantial. It seems that the informed bodies are very critical of the exterior movement, the harmony of the building with adjacent areas and the old city of Jeddah. On the other hand, compatibility of uses does not pose any problem.

IV. Conclusions

This analysis has shown that the NCB building is a magnificent edifice and, as such, is a source of admiration. Moreover, the building is quite compatible with the immediate surrounding area and other forms of land use.

Major criticism of the NCB building centres around the inefficient external movement and insufficient parking facilities. Another factor, felt strongly by the group of professionals, is that of the apparent incompatibility of the NCB building with the traditional area of Jeddah. It is worth mentioning that the old city of Jeddah is very well renowned for the beauty of its vernacular architecture; the NCB building therefore may contrast with the historic area in that respect.

Acknowledgement

The author is deeply indebted to Dr. Farooq Mofti and Dr. Walead Abulaal for their assistance in the preparation of the questionnaire. Thanks also go to Mr. Talal Al Mashhadi, Deputy Manager of NCB for Public Relations for distributing the questionnaire.

Dr. Hossny Aziz Alrahman
Jeddah, 10 May 1989

Appendix

Table 1

Survey Results

The NCB Employees

	Excellent Sufficient	Good Insufficient	Fair Do not know
Interior spaces	83	12	5
Interior Movement	93	7	-
Ventilation	69	29	2
Lighting	74	26	-
Decoration (offices)	62	38	-
Decoration (customers' area)	83	12	5
Façade	62	10	24
General Impression	86	14	-
Land Mark	98	2	-
Impressive Landmark (source of admiration)	98	2	-
Compatibility with adjacent area	74	26	-
Exterior Movement	45	43	12
Car Parks	31	14	52
Relation with Red Sea	69	24	7
Contribution of NCB building	17	26	58
Harmony with the traditional area	74	17	10
Harmony with other land uses	69	10	21

Total number of cases: 42
Figures are in percentages and may not add up to 100 due to rounding.

Table 2

Survey Results

The NCB Customers

	Excellent Sufficient	Good Insufficient	Fair Do not know
Interior spaces	83	-	17
Interior Movement	100	6	-
Ventilation	94	6	-
Lighting	100	-	-
Decoration (offices)	94	-	6
Decoration (customers' area)	72	-	28
Façade	44	-	56
General Impression	94	-	6
Land Mark	100	-	-
Impressive Landmark (source of admiration)	100	-	-
Compatibility with adjacent area	78	22	-
Exterior Movement	56	44	-
Car Parks	33	61	6
Relation with Red Sea	94	6	-
Contribution of NCB building	56	6	39
Harmony with the traditional area	83	-	17
Harmony with other land uses	94	-	6

Total number of cases: 18

Figures are in percentages and may not add up to 100 due to rounding.

Table 3

Survey Results

The NCB Neighbours

	Excellent Sufficient	Good Insufficient	Fair Do not know
Interior spaces	92	4	4
Interior Movement	96	4	-
Ventilation	80	16	4
Lighting	72	28	-
Decoration (offices)	60	36	4
Decoration (customers' area)	68	16	16
Façade	52	12	36
General Impression	84	16	-
Land Mark	96	4	-
Impressive Landmark (source of admiration)	92	8	-
Compatibility with adjacent area	56	36	8
Exterior Movement	40	52	8
Car Parks	28	40	32
Relation with Red Sea	62	20	8
Contribution of NCB building	28	12	60
Harmony with the traditional area	76	16	8
Harmony with other land uses	72	8	20

Total number of cases: 25

Figures are in percentages and may not add up to 100 due to rounding.

Table 4

Survey Results

The Professionals

	Excellent Sufficient	Good Insufficient	Fair Do not know
Interior spaces	100	-	-
Interior Movement	80	20	-
Ventilation	60	40	-
Lighting	20	80	-
Decoration (offices)	40	40	20
Decoration (customers' area)	60	40	-
Façade	60	20	20
General Impression	80	20	-
Land Mark	60	40	-
Impressive Landmark (source of admiration)	80	20	-
Compatibility with adjacent area	60	40	-
Exterior Movement	20	80	-
Car Parks	20	40	40
Relation with Red Sea	20	60	20
Contribution of NCB building	20	20	60
Harmony with the traditional area	20	80	-
Harmony with other land uses	80	20	-

Total number of cases: 15

Figures are in percentages and may not add up to 100 due to rounding.

1. What is your opinion about the the National Commercial Bank building in the following respects:

a) Interior Spaces

☐ Adequate ☐ Inadequate ☐ Do not know

b) Internal circulation

☐ Easy ☐ Difficult ☐ Do not know

c) Natural/mechanical ventilation

☐ Excellent ☐ Adequate ☐ Inadequate

d) Natural/artificial lighting

☐ Sufficient ☐ Insufficient ☐ Do not know

e) Decoration of offices

☐ Excellent ☐ Adequate ☐ Fair

f) Decoration of customers' area

☐ Excellent ☐ Adequate ☐ Fair

g) Architectural elements of the façade

☐ Beautiful ☐ Ugly ☐ Do not know

2. What is your general impression of the NCB building?

☐ Like it very much ☐ Like it ☐ Do not like it

3. Do you consider the NCB building as a landmark in Jeddah?

☐ Yes ☐ No ☐ Do not know

4. If so, how would your rate the NCB building?

☐ Impressive landmark ☐ Ordinary landmark ☐ Landmark

5. What is your view of the compatibility of the NCB building with its surrounding urban fabric?

a) The relation of the building with adjacent buildings and spaces

☐ Strong ☐ Fair ☐ Difficult

b) Exterior movement

☐ Easy ☐ Fair ☐ Difficult

c) Availability of car parks

☐ Plenty of spaces ☐ Sufficient ☐ Insufficient

d) The relation of the NCB building with the Sea (Lagoon)

☐ Strong ☐ Fair ☐ Weak

6. How do you see the contribution of the NCB building in strengthening socio-cultural ties?

a) Provides job opportunities

b) Serves as a meeting place for customers

c) Provides banking services to the community

7. How compatible is the NCB building with the traditional (central) area from the following points of view?

a) Harmony with traditional buildings

☐ Compatible ☐ Incompatible ☐ Do not know

b) Compatibility with surrounding land-uses

☐ Compatible ☐ Incompatible ☐ Do not know

1989 Technical Review, Local Report
by *Walead A. Abdulaal*

0684.SAU

National Commercial Bank

Jeddah, Saudi Arabia

I. Introduction

The purpose of this report is to evaluate the National Commercial Bank (NCB) building located in the centre of Jeddah. This evaluation was requested by the Aga Khan Award for Architecture and, therefore, will follow the guidelines provided by this institution. The guidelines suggest that five categories of Jeddah Saudies are to be interviewed and probed about the building, these are:

- Employees of the bank,
- Customers of the bank,
- Municipal leaders of Jeddah,
- Jeddah architects and urban planners,
- Sample of average Saudies living or working in the vicinity.

Issues to be raised would include the liking and disliking of the building, suitability of the building to the surroundings, etc.

To achieve the above objective a questionnaire was prepared to interview the above mentioned categories of Jeddah Saudies, except for municipal leaders of Jeddah whom it was difficult to interview. A sample was chosen from the other four categories as shown in Table-1. The main reason behind choosing this sample is the limitation of time and people involved in the search. However, it appears that this sample would be enough for the purpose of the study. The following sections will present:

Table 1: Number of people interviewed in each category

Category	Number	%
Employees of the bank	42	42
Customers of the bank	18	18
Professionals	25	25
Nearby residents	15	15
Total	100%	100%

II. Liking and Disliking of the Building

Seven attributes of the building were identified in the questionnaire and people were asked to give their opinion on them. The seven aspects include interior spaces, interior circulation, ventilation, illumination, aesthetic aspects in offices and in customer areas, and exterior aspect of the building. These were chosen to compose both the interior and exterior elements and therefore, when combined will produce the people's opinion on the building, i.e. whether they like or dislike the building. First we present the results of the questionnaire for each of the seven aspects and then summarise them at the end of this section.

a. Interior Spaces and Circulation

The four categories of Jeddah residents were asked about the adequacy of the interior spaces and the interior circulation of the building. Table-2 shows people's reaction to the adequacy of the interior spaces.

Table 2: Adequacy of interior spaces

Spaces	NCB employees	NCB customers	Professionals	Nearby residents
Adequate	83	83	100	92
Inadequate	12	17	-	4
Do not know	5	-	-	4
Total	100%	100%	100%	100%

It is clear from Table 2 that the majority of each of the four categories of Jeddah residents think that interior spaces are adequate in the NCB building. There are major differences in the answers provided by the various categories of people, hence only a little proportion think that the interior spaces are inadequate. Interior circulation is indifferent, because the majority of the people interviewed liked the circulation inside the building as shown in Table 3. It is evident from Table 3 that only a minority in each category of the people interviewed think that interior circulation of the NCB is difficult. Therefore, one can generalise and say that interior spaces are adequate and provide easy circulation (as shown in Table 3).

Table 3: Interior circulation of NCB

Circulation	NCB employees	NCB customers	Professionals	Nearby residents
Easy	93	100	80	96
Difficult	7		20	4
Do not know	-	-	-	-
Total	100%	100%	100%	100%

b. *Ventilation and Illumination*

Ventilation and illumination are considered to be two of the important aspects in the efficiency of a building. People were asked whether they think that ventilation, illumination and lighting (natural and/or artificial) in the NCB building are good, fair or inadequate. Results are shown in Table 4 and a majority think that ventilation is good, although, in varying proportions.

Table 4: Ventilation

Ventilation	NCB employees	NCB customers	Professionals	Nearby residents
Good	69	94	60	80
Fair	29	6	20	16
Inadequate	2	-	-	4
Do not know	-	-	-	20
Total	100%	100%	100%	100%

We should emphasise the opinion of the NCB employees, because they are the ones who are always inside the building; about two thirds of them think that ventilation is good and less than a third think that ventilation is fair. Less significant are those who think that the building has inadequate ventilation. Illumination in the building is a bit different as shown in Table 5.

Table 5: Illumination

Illumination	NCB employees	NCB customers	Professionals	Nearby residents
Good	74	100	20	72
Fair	26		80	28
Inadequate	-	-	-	-
Total	100%	100%	100%	100%

The majority in each group, except for professionals, think that the building is well illuminated and nobody in any category thinks that the illumination in the NCB building is inadequate. However, 50% of the professionals think that illumination is fair; perhaps they were judging from an ideal point of view, nevertheless one should not underestimate or over-value their response. The majority of all other categories, especially the users, think that the building has good illumination, however, the evaluation must not overlook this response.

c. *Aesthetic Aspects*

People were asked about the aesthetic aspects both in the offices and in the customers' area (mainly the ground floor). Table 6 shows the results of the questionnaire on aesthetic aspects in the offices.

Table 6: Aesthetic aspects in offices

Aesthetic aspects	NCB employees	NCB customers	Professionals	Nearby residents
Provided	62	94	40	60
Not provided	38	6	40	36
Do not know	-	-	20	4
Total	100%	100%	100%	100%

Different answers are provided by each group. The striking answer is that of the customers; 94% of them think that aesthetic aspects are satisfactory in offices; however, this is not the opinion of the other groups, especially employees: more than one third of them think that aesthetic aspects are not satisfactory in offices. Perhaps the offices lack plants, pictures, paintings or other things that would add to the beauty of them. Aesthetic aspects in the public areas of the building (customers' area) seem to be satisfactory as the majority of the people interviewed think that they are provided for. Different proportions are presented by each group, but the general conclusion is that fewer people think aesthetic aspects are not provided for, in the public areas of the building.

Table 7: Aesthetic aspects in customers' area

Aesthetic aspects	NCB employees	NCB customers	Professionals	Nearby residents
Provided	83	72	60	68
Not provided	12	28	40	16
Do not know	5	-	-	16
Total	100%	100%	100%	100%

d. *Exterior Appearance of the Building*

People were asked whether they liked the exterior appearance of the building or not (see Table 8).

Table 8: Exterior of the building

Exterior of the building	NCB employees	NCB customers	Professionals	Nearby residents
Like	63	44	60	52
Dislike	10	-	20	12
Do not know	24	56	20	36
Total	100%	100%	100%	100%

People were asked about their general opinion of the building as shown in Table 9.

Table 9: General impression of the building

Impression	NCB employees	NCB customers	Professionals	Nearby residents
Admire very much	86	94	80	84
Admire	14		20	16
Do not know	-	6	-	-
Total	100%	100%	100%	100%

It is very clear that the majority in all categories of Jeddah residents greatly admire the building and only 6% of customers said that they do not like it. Apart from this minority, the above results represent the people's liking of the building. This should be the conclusion and the answer to the first set of questions - liking or disliking the building.

III. The Building as a Landmark

The above analysis showed that the sample interviewed from each category view the NCB building as a source of admiration. We took this point further and asked the people interviewed whether they consider the NCB building as a landmark or not (see Table 10). An outstanding majority of all groups, except the professionals, viewed the building as a landmark in the city of Jeddah. In contrast 40% of the professionals did not think so. In my view, the building as it stands (form & shape) constitutes a major landmark in the city especially in the CBD, a view that is shared by a high proportion of all other category groups. Probably some professionals look at the building from a technical viewpoint and do not think of it as a landmark, but this does not represent the general public's opinion which appreciates the NCB building as a landmark.

Table 10: The building as city landmark

Impression	NCB employees	NCB customers	Professionals	Nearby residents
Yes	98	100	60	96
No	2	-	40	4
Total	100	100	100	100

This point was further elaborated by asking those who said yet in Table 10 whether the NCB building is a cause of civic pride (see Table 11). None of the people interviewed consider the building as an usual building. In contrast the bulk of them viewed the NCB building as a distinguished cause for civic pride in the city of Jeddah. From the above, one may conclude how residents of Jeddah of various groups consider the NCB building as a source of admiration and civic pride.

Table 11: Rank of landmark

Rank	NCB employees	NCB customers	Professionals	Nearby residents
Distinguished	98	100	80	92
Medium	2		20	8
Usual	-	-	-	-
Total	100%	100%	100%	100%

IV. Suitability with Adjacent Areas

Judgement on this issue was reached by asking the following questions:

a. Relationship with the surroundings

Two points are of vital importance in this issue. Firstly, the relationship of the building with the surrounding buildings. It is worth noting here that surrounding buildings are of different types. They include modern office blocks of various sizes and some traditional old houses of high architectural quality. Therefore we may make an exception of some inconsistency in the answers to this point as shown in Table 12. Relationship of the NCB as a modern office block with the surrounding office blocks may be positive and therefore a considerable proportion in all groups said that the NCB shows good relationship with the surrounding buildings. Nevertheless, the existence

of the traditional buildings hinders this relationship, because the NCB does not match the old traditional buildings. There is no doubt that there are some people who consider this relationship as fair but not good as shown in Table 12.

Table 12: Relationship with the surrounding buildings

Relationship	NCB employees	NCB customers	Professionals	Nearby residents
Good	74	78	60	56
Fair	26	22	40	36
Bad	-	-	-	8
Total	100%	100%	100%	100%

However, integration with the surroundings does not stop at relationships with buildings, but includes other features of the vicinity especially the Red Sea and the Lagoon located to the north of the building. Table 13 shows people's opinion about the coherence of the building with these two features (Sea & Lagoon). The table shows the different opinions of the various groups; the majority of customers and a considerable number of employees and residents consider the coherence as being strong. On the contrary, 60% of the professionals view this relationship as being bad. This is a matter of opinion and certainly the coherence between the NCB and the Sea and Lagoon is not optimum.

Table 13: Coherence with the Red Sea and the Lagoon

Coherence	NCB employees	NCB customers	Professionals	Nearby residents
Strong	69	94	20	72
Fair	24	6	20	20
Bad	7	-	60	4
Do not know	-	-	-	4
Total	100%	100%	100%	100%

b. *Car circulation and parking around the building*

The people interviewed were asked about traffic movement around the building as shown in Table 14. There is a general consensus that traffic movement around the building is not easy.

Table 14: Traffic movement around the building

Traffic	NCB employees	NCB customers	Professionals	Nearby residents
Easy	45	56	20	40
Fair	43	44	80	52
Difficult	12	-	-	8
Total	100%	100%	100%	100%

This is natural in any busy CBD, due to the high volume of traffic caused by the numerous activities in the city centre of Jeddah. Traffic is highly affected by the availability of car parking in the surroundings of the building as shown in Table 15. Different answers were provided by each group. 94% of customers say that car parking is adequate. It is worth noting that most of the customers work in nearby buildings which provide car parks for their employees or else they hire a parking space by the year in the public car park and therefore they do not view car parking as a problem. The other groups see existing car parking spaces as problematic because of the difficulty in accommodating all cars.

Table 15: Provision of car parking in the surroundings

Provision	NCB employees	NCB customers	Professionals	Nearby residents
Adequate	45	94	60	68
Inadequate	55	6	40	28
Do not know	-	-	-	4
Total	100%	100%	100%	100%

V. Socio-Cultural Effects of the Building

The people interviewed were asked to give their opinions about the role played by the NCB building in affecting the socio-cultural aspects of the building as shown in Table 16.

Table 16: Socio-cultural effects of the buildings

Effect	NCB employees	NCB customers	Professionals	Nearby residents
Provide employment	17	56	20	28
Meeting place for clients	26	6	20	12
Provide banking services	29	39	60	48
Do not know	29	-	-	-

People were asked to choose one of these effects. There is no doubt the NCB provides banking services; in addition, different people from each group viewed the NCB as having some effect on the socio-cultural aspects. No adverse effects were mentioned and only positive influences were highlighted as shown above.

VI. History of the Area and Rules of Land Use

The existing site of the NCB was part of the old city of Jeddah, famous for the significant architectural value of its buildings. The people interviewed were asked specifically about the homogeneity of the NCB in relation to the traditional buildings of the area as shown in Table 17.

Table 17: Homogeneity with traditional buildings

Relationship	NCB employees	NCB customers	Professionals	Nearby residents
Homogeneous	74	83	20	76
Heterogeneous	16	-	80	16
Do not know	10	17	-	8
Total	100%	100%	100%	100%

A majority in all groups, except professionals, view the building as homogeneous with the traditional buildings of the area. The NCB certainly provides a completely different style of form, shape, size and character from the traditional buildings of the area. Therefore the professionals' view is doubtful.

Suitability with surrounding land uses was the final question asked; results are shown in Table 18.

Table 18: Suitability with the surrounding land uses

Suitability	NCB employees	NCB customers	Professionals	Nearby residents
Suitable	69	94	80	72
Not suitable	10			8
Do not know	21	6	20	20
Total	100%	100%	100%	100%

Clearly, the majority in each group think that the building suits surrounding land use. Others who are doubtful of this suitability might favour the conservation policy of the area which is not to demolish traditional old buildings and not to increase commercial activities in the CBD. However, the building does not conflict with land use regulations because the site was not part of the conservation policy controlled by the Municipality of Jeddah.

VII. Conclusion

The above analysis provided an evaluation of the NCB building according to the guidelines given by the Aga Khan Award for Architecture. There was a consensus agreement among the different groups of Jeddah residents that have been interviewed that they admire the building and consider it as a cause for civic pride and a distinguished landmark in the city of Jeddah. Other issues like coherence with the Red Sea and the Lagoon were a point of conflict where professionals disagree with other groups.

Traffic movement and parking space were generally thought of as a problem around the building, but this is a feature of the CBD itself rather than being associated with the NCB alone. The NCB was considered by all groups, though variably, to contribute to the socio-cultural aspects of the city. However, its relationship with the surrounding traditional buildings was seen as heterogeneous by the majority of the professionals, i.e., Jeddah architects and urban planners. This is very clear indeed, as the NCB differs in form and character from the highly valued traditional buildings of the area. Apart from this issue, the NCB stands as a source of admiration and cause for civic pride in Jeddah.

Walead Abdulaal
Jeddah, 10 May 1989

1986 TECHNICAL REVIEW SUMMARY

National Commercial Bank
Jeddah, Saudi Arabia

684.
SAU.

The building is the headquarters of the Bank as well as a prestigious local branch bank. It contains a banking floor, regional, management and international offices, as well as prestigious areas for directors on top. The solution is a daring attempt at crossbreeding an international building type with regional devices for dealing with a hot, damp climate.

Date of Completion: 1983, November

I. OBJECTIVES

To combine in a single building a number of banking functions which had previously been spread between four buildings in Jeddah;

to create a strong image of a family company, implying wealth, stability, security, and taste;

to express in a single design the aspirations of a client who combines international horizons and a firm sense of tradition;

to re-define the skyscraper, combining the most up-to-date equipment with abstracted versions of traditional elements for dealing with an extreme climate.

II. DESCRIPTION OF THE SITE

Topography, Climate

The site is a headland that projects into an inlet of the Red Sea. The old city of Jeddah is to the east, with what remains of its narrow streets, white-washed walls and elaborate wooden mashrabiyyas over the windows. To the northeast is the al Manqubah lagoon, making an entrance to the harbour, and cutting about one kilometer inland. The site is

bordered by King Abdul Aziz Street on its east side and by the Corniche Road on its west side. It should be noted that those drawings showing the building pointing out to sea like the prow of a ship, with the cylindrical parking in tow on the landward side, are inaccurate. In fact, the parking is on the ocean side and the building turns its back, with the elevator tower, to the sea. The area immediately next to the site along the Corniche in each direction is characterized by buildings whose height is 7 to 12 storeys, most of them mediocre in quality.

The climate is hot / damp. Summer temperatures can climb to the upper 40's centigrade with high humidity, 75 - 95%. The prevailing wind is from the west, off the sea, but occasionally a strong east wind comes from the desert and this mixes sand with the damp. In winter, temperatures are regular and pleasant, in a band between 15 and 35°.

Historical Background

Early maps of Jeddah show that the site was outside the old town enclave. It once functioned as a fishmarket. In the early 20th century, the British built a consulate here. Later, the municipality had a police station. T.E. Lawrence is supposed to have lived in a small (remaining), traditional house opposite. The idea that the Bank bulldozed a row of fine old houses is a total myth.

Local Architectural Character

The vernacular of the old town is characterized by whitewashed, cubic forms, attached lattices of mashrabiyyas, flat roofs and ingenious sections to aid the circulation of air. The old town has taken a severe beating from clumsy modern development and changing Saudi social values which associate it with a poorer past. The Corniche stands outside the perimeter of the old town and here the scale of buildings is much bigger - a kind of Middle Eastern Lake Shore Drive. Bordering the site is a glass curtain wall building of mediocre quality. The immediate setting is not distinguished architecturally and is already severeely disjointed from the old town across the way.

Access

Cars enter the site off King Abdul Aziz Street by means of a narrow lane which swings around the building to enter the spiral parking lot. Otherwise, one is dropped off on the same street in front of the steps and canopy that lead to the main banking hall. Pedestrians can filter through the site from the Corniche road.

III. DESIGN AND CONSTRUCTION

Architect's Brief

The problem was to provide 56,300 square meters (approximately) of usable space (with parking extra) on what was envisaged as a site of approximately 4 acres (actually, the client had land acquisition problems, and not all this space was bought). The Bank was really combining a number of preexisting operations spread out around the city into a single, prestigious headquarters. The main functions were:

1. A spacious banking hall with adequate room for executives as well as tellers, to deal with local accounts;
2. Up-to-the-minute vaults and security zones in the basement;
3. Regional management offices;
4. General management offices;
5. International division ...
6. ... in proximity to prestigious lounges, dining rooms, etc.;
7. Luxury offices for directors.

If this list is turned on its head, it gives the basic functional breakdown of the building.

Beyond merely pragmatic questions, the client, Sheik Mohamed Bin Mahfooz, wished to experiment. He did not want just another box, and he certainly did not want an orientalist pastiche. Gordon Wildermuth of Skidmore, Owings and Merril has suggested that the client's aims were paradoxical: on the one hand the need for a display of stability and wealth, and, on the other, a need for cautious restraint.

Evolution of Design Concepts

The guiding ideas of the scheme were formulated by Gordon Bunshaft, a doyen of the firm with a long list of notable skyscrapers to his name. Form the start, he wanted to design a building that would exclude sun, dust, glare and heat while making the most of natural light and of views up and down the Read Sea coast. After some experimentation with both a courtyard and gardens in the air, he came up with a compact, triangular building which was (in effect) a conventional "glass box" skyscraper turned outside in, leaving the core of elevators as an adjunct tower and the majority of exposed surfaces as masonry. Work spaces were defined by strips about 45' from wall to glass, all of them looking down into a garden and out over the context. By ingenious stacking and rotation about every 8 floors, it was possible to "zone" the building so that its main divisions corresponded to those in the Bank. Light was admitted through vast openings which nonetheless kept out glare and direct sun light. In turn, warm air was siphoned up a central shaft to create a cooler micro-climate next to the glass. In effect, Bunshaft "re-thought" certain basic principles of the courtyard, the mashrabiyya and the wind tower, but without imitating their appearance; or, perhaps, he "re-thought" the tall building as a type, giving it a distinctly regional anatomy. The character of the tower was sober yet restrained. It was a building that dealt squarely with the modernizing aspirations of the Saudi middle class, while touching old chords in the past.

The triangular plan accommodated a variety of conditions in a simple way. At ground level, the entrance was arranged on one axis into a tall banking floor with a mezzanine; an auditorium fitted neatly into one corner, while on all floors service ducts were run up though the apices. The triangle also fitted the site and gave the impression of a prow pulling out into the Red Sea, perhaps an appropriate image for a Bank with increasingly international scope. Parking was behind on the landward side in a spiral lot. At one stage, the client encouraged the architect to investigate a taller and narrower scheme, but there was some concern that this would be too grandiose.

Working drawings were already complete and work on foundations had already started when the seaward end of the site came under dispute. The municipality of Jeddah had allowed the client room for access and planting in exchange for some underground parking, but the deal

unravelled in the face of sinister machinations. Work stopped altogether, and it seemed that it would never start again. But, Gordon Wildermuth (the architect in charge) re-designed the building on the same basic idea so as to fit it into the reduced lot. As a result, the building looks over city and not sea, its "main" façade being established on King Abdul Al Aziz Street. The seaward side has the rather blank elevator façade facing towards it.

The exteriors of the Bank were deliberately reduced and restrained, gaining their impact from broad surfaces of travertine, giant gashes of shadow and sturdy proportions. Only at the top is a more delicate scale admitted - where a "cornice" is defined by the pillars before the terraces of the prestigious directors' floor. In plan, the triangle is the generator, and comes through into stairs, structural systems and the stone jointing of floors. But Bunshaft avoids banal regimentation: in fact, partitions and transparancies create effects of great richness and ambiguity, especially on the upper floors. Traditional motifs are used only sparingly - e.g., the patterned marble floors and the fountain in the lobby. But it could be argued that the whole building constitutes a radical reexamination of traditional principles.

Landscaping was always an essential part of Bunshaft's idea, especially on the upper terraces. Presentation drawings showed palm groves at these levels. In fact, less luxuriant vegetation grows there.

Structure, Materials, and Technology

The Bank rises to 27 storeys and is of structural steel with clear spans of 15 meters. Floors are cellular steel decking allowing room for air ducts, electrical ducts, etc. The ceiling of the Banking hall is coffered concrete. Main external walls are precast concrete, insulated, then finished in travertine veneer.

Marble is used in the ground floor and polished black granite on the 23rd floor; otherwise the usual finish is carpet tiles. The curtain wall is made from gray tinted insulating glass, which is bluer over each floor edge. The garage is made from precisely finished bare concrete, sandy in colour.

The building stands on piles protected by a slurry wall. The foundation conditions are complicated by proximity to the Sea and the corrosive power of local chemicals.

Origin of Technology, Materials, Labor

As usual, very little of the material or the skill is from Saudi Arabia:

The steel comes from Japan;
marble from Italy;
mechanical systems from the U.S.A.;
elevators from Germany;
furniture from France.

Skidmore, Owings and Merrill is a huge, diversified architectural firm with main offices in Chicago and New York. Their interior departments oversaw main phases of the design, including structural design. Numerous external consultants were involved, e.g., Schindler Ltd. for elevators; Chubb and Sons for vaults; Johnson Controls for the security system.

The main contractor was Korean - Samwhan Corporation (project manager: B.Y. Park). The largely unskilled Korean labour force turned out to be extremely skillful and met the highest expectations of SOM.

IV. CONSTRUCTION SCHEDULE AND COSTS

History of Project

1975 - 76	:	First discussions at Bank concerning new building.
1977	:	Skidmore, Owings and Merrill selected. Design starts.
1979, October	:	Construction begins.
1983	:	Construction completed - one year having been lost due to crisis over site.
1984	:	Building occupied.

Costs

Absolutely no cost figures are made available by the Bank or the architects (in respect of agreement with the Bank). The sensitivity is itself of interest. The Mahfooz family (which owns and runs the Bank)

likes to maintain a relatively low profile. Moreover, there seem to have been many debates between members of the family and shareholders about expenses incurred. Mr. Bunshaft did reveal that there was no budgetary limit set, that the client (principally Sheikh Mohamed Bin Mahfooz) wanted the very best of everything; on the other hand, the client was happy to go to the lowest bidder on actual construction.

Anyone who has experienced first hand the superb silks, marbles and metals of the upper floors senses that "no expense has been spared". Moreover, the building contains a range of environmental and fire equipment more sophisticated than that installed in most contemporary U.S. schemes. These are not signs of a cost paring mentality.

V. TECHNICAL ASSESSMENT

Functional Aspects

The Banking Hall at ground level provides a noble and airy space for day to day transactions. It is reached easily from the street entrance or from the spiral parking. The standard office spaces are spacious and open in plan with rooms along the solid wall of each floor and burolandschaft along the glass curtain wall. This serves the pragmatic purposes of the bank well, but the employees have had some difficulty adjusting to the openness and lack of privacy. The luxury floors at the top have been a total success with the elite of the bank. Some argue that there should have been a mosque incorporated.

Climatic Performance

The fundamental gesture of turning a skyscraper outside in, providing shaded openings, a ventilated core and heat reflective masonry on the outside, has worked remarkably well in cutting down negative effects of the sun. The spaces are fully air conditioned but the load is far less than it might have been. The western afternoon sunlight strikes the most blank of the walls (that with the external elevator core); in fact, it can be argued that the earlier design (so much better in its fit on the site) would have been worse in its orientation to the fiercest rays. The combination of big openings and a central shaft works well in moving the sticky air upwards. At the top, the air moves rapidly, even on a

relatively still day, and the temperature just outside the glass may be as much as 10° C lower than it is outside the building. In fact, the updraft can be too effective: recently in a dust storm, two trees on a terrace were uprooted completely!

Materials, Technology, Maintenance

The main structure is steel, braced to deal with lateral wind loads. Large girders bridge the big openings. The steel is clad in pre-cast concrete, insulation and travertine panels. Joints are extremely fine. The honey coloured stone maintains a smooth and curiously scale-less external finish that goes well with the almost surrealist simplicity of the main massing. Stone work in floors and the plaza is also to a very high standard. It remains to be seen how well the curtain wall will stand up to the corrosive atmosphere of Jeddah.

The machinery at use in the Bank is extremely sophisticated. A B.M.S. (Building Management System) regulates air conditioning, electrical systems and fire control by means of computers. In case of power cuts, there are three compact 600 kw turbine emergency generators; in the event of water shortages, the building has a five day supply of its own. As humidity in Jeddah is so high, the A/C system has to reduce moisture. Distribution is made through angles of the tower and then through the floors by integrated light fixtures. Technology is celebrated as well as used - for example, the silent, electric powered doors on the directors' floors or the private lift from the heli-pad down to the boss' suite: this has rails meeting over it in the form of an arch which automatically close the lid over the machinery as the lift descends!

Design Features

See Section VII below, "Aesthetic Assessment"

IV. USERS

The building houses approximately 2,000 employees and some of its floors are used by the general public, e.g., the main Banking Hall at ground level. The social range is considerable - all the way from cleaning staff and chauffeurs through the middle level management and resident engineers to the upper echelons of directors and owners. The public is

given an impressive demonstration of wealth and stability (marble, travertine, fountains, ample space, etc.). Ordinary functionaries have jolly colours and a well lit canteen. The top people have marble, silk, onyx, gilded doors, restrained colours, etc. The architecture itself conveys subtle messages: wealthy but never vulgar, international yet not de-racinated, mechanistic yet clad in solid masonry.

William J.R. Curtis

13 May 1986

National Commercial Bank, Jeddah, Saudi Arabia