

ARAB REPUBLIC OF EGYPT
NEIGHBORHOOD URBAN SERVICES PROJECT
EVALUATION



PHASE II



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NUS EVALUATION PROJECT PHASE TWO

CONTRACT MANAGEMENT

AND

SUBPROJECT MAINTENANCE

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CONTRACT MANAGEMENT & SUBPROJECT MAINTENANCE

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CONTRACT MANAGEMENT & SUBPROJECT MAINTENANCE

1. INTRODUCTION

1.1 Purpose

a) Identify successes that NUS has achieved in carrying through to completion construction of subprojects that are viable in the Egyptian urban context and capable of being maintained without imposing an excessive burden on local government;

b) Raise issues meriting attention from NUS in the person of its principal actors: AID, its TA contractor Wilbur Smith & Associates, and the GOE at both district and higher levels.

c) Aid in clarifying and identifying avenues of possible solution to problems.

1.2 Rationale

NUS is meeting its targets both in the number of subprojects constructed and in the numbers of people to be trained. Furthermore, our case studies, site visits, and interviews reveal that with very few exceptions, subprojects are appropriate, wanted, and used. Additionally, in spite of the pressure of volume of NUS construction, the quality of work is as good and often better than that generally done on comparable public facilities in Egypt.

However, the TA Contractor's study of maintenance of 200 early NUS subprojects showed almost a third of them needing repairs and over half needing at least some additional attention. Also, the recent (March 1984) evaluation of the sister BVS Project highlighted maintenance as the "time bomb" ticking away within an otherwise largely successful project. Such words conjure up a vision of 1000 NUS subprojects falling into assiduous disrepair in a few short years and becoming an embarrassment to both the American and Egyptian governments. On the positive side, the TA Contractor's survey covered

subprojects largely constructed before the effective provision of technical assistance and hence measure not the effectiveness of NUS but the baseline situation that NUS is trying to correct. By the end of NUS, an improved maintenance situation would be one important indicator of an improved local capacity for managing public facilities.

The evaluation team in consultation with AID project management in Cairo and Washington, and with the TA Contractor, decided to include as a major component of the Phase Two Evaluation a strong look at the maintenance situation. Other components of the Phase Two Evaluation are case studies of:

- (a) District Decision Making and Community Involvement
- (b) Six Private Voluntary Organizations in Cairo Neighborhoods

1.3 Approach

Maintenance. Many maintenance problems originate in defects in subproject planning, design, costing, construction and acceptance by the district. For this reason, we examine maintenance in the broadest sense of the durability and viability of construction subprojects, rather than just the specific maintenance procedures and problems. What defects or omissions occur in the process of contract management lead to premature and excessive maintenance needs? How effectively are these issues being addressed or solved under NUS? What can be done to improve the situation during the remainder of NUS project execution? What aspects of the overall maintenance issue respond to technical assistance and what aspects demand resolutions at higher governmental and inter-governmental levels?

Contract Management. An important, but often forgotten, aspect of NUS is that these subprojects are implemented through a partnership between local government and the Egyptian private construction industry as represented by small businesses. The degree of success of NUS and the quality of subproject construction directly reflects how effectively district governments are able to manage this public/private contracting situation for the public good. Within Egypt, there is, for historical reasons, a certain debate over the

benefits of public versus private enterprise. NUS stresses the combination of the two, and ultimately most of the NUS funds go to the private sector, while strengthening the management capacity of local government.

ISTI/SRC put together a team to look at the twin issues of maintenance and subproject contract management. This team included a senior engineer with experience with the Agency and in Egypt, a senior management consultant with experience with both private and public sectors of developing countries, and a senior Egyptian social scientist from the faculty of the American University in Cairo. Time was limited and the team is aware that a brief investigation of a few weeks is no substitute for the great bulk of experience of the responsible people in the GOE and with the TA Contractor. Much of what follows reflects what we learned from those "in the field".

2. METHOD

The team was in Cairo and Alexandria for three weeks between October 8, 1984 and November 4, 1984. The methodology can be summed up under three headings: 1) activities, 2) system analysis techniques, and 3) document review.

2.1 Activities

We conducted a series of briefings, initially with AID and Wilbur Smith, and then with those districts where we later conducted site visits and interviews. The purpose of the briefings was to explain what we were doing, why and how; ask for suggestions about our methodology; and obtain cooperation.

We made site visits to observe the quality of construction and note any problems. We made a special effort to observe subprojects at a stage of construction where any serious problems might be detected. In cases of finished subprojects we were able to interview users. For some still under construction we were able to interview workers and the contractor.

We conducted interviews, generally individual interviews, with AID personnel, Wilbur Smith management and engineering staff in Heliopolis and in Alexandria, and those district personnel most involved with NUS in two districts, Helwan (Cairo) and East (Alexandria). The district personnel interviewed were the district chief, NUS coordinator, Secretary General, engineers, controller, contracts officer, finance director, and the maintenance chief.

After completing site visits and interviews in each district, we held a debriefing workshop with the district staff interviewed. In these sessions we reviewed with the participants the data we had obtained from them as well as our own observations and reflections. Thus they had the opportunity to review and discuss the consolidated viewpoint we were developing. In the course of these sessions, internal misunderstandings and problems surfaced of which they had been previously unaware. Lively debate ensued during which they solved some of these problems. We held two of these workshops. In the first instance, the secretary general was present as well as the American consultants. In the second workshop, the American consultants stayed away and the district leadership (district chief, secretary general) also were asked not to attend. This proved to be much more productive for open and frank discussion. We include minutes of this workshop in Appendix A.

At the end of the field visits, in preparation for report writing, we held a debriefing with AID project management and the relevant personnel from the Technical Assistance Contractor. This proved very useful for all parties concerned, as it reviewed in a preliminary way the stages of subproject management, and the system analysis techniques.

In addition to the above, the evaluation group doing district case studies did a case study on the changing patterns of technical assistance in a strong district. This case study is included in this report as Appendix B.

2.2. System Analysis Techniques

NUS projects require cooperation between personnel who exercise different functions, possess allegiance to different organizational

units, and respond to differing organizational demands. We used four analytical techniques to try and capture all aspects of these relationships.

First we sketched out the sequence of stages through which a district construction subproject proceeds: from planning and site selection, through design, costing, contracting, construction, completion and acceptance, to operation and maintenance.

Then, using organization charts made available to us and others we constructed in the course of interviews, we mapped out the information flows and accountabilities in the NUS process.

To identify overlaps, conflicts or omissions in NUS implementation we blocked out a responsibility chart, on which we listed the key actions of the NUS process and plotted the nature of each person's responsibility with regard to these actions.

And finally we used a Diagnostic Performance Model to guide the collection of data in our interviews and capture information highlighting deficiencies in performance and capacity that warrant attention.

2.3 Document Review

Before going into the field we reviewed the following documents:

ISTI/SRC

- a. October 1983 Phase I Evaluation Draft Report
- b. December 1983 Phase I Evaluation Report (including separate annex)
- c. March 1984 Phase I Evaluation Compilation of Basic Data on Resources and Responsibilities (Done jointly with WSA).
- d. Memos to AID Project Officer
- e. Phase II Workplan

f. Field notes and report drafts of ISTI Phase I engineering consultant

g. Interview notes from current Phase II case studies

AID

a. Project Paper

b. Memos to IAC from Project Officer

c. AID engineer's field trip reports

WILBUR SMITH

a. Annual Work Plans (1,2,3)

b. Mid Project Report (Draft)

c. Monthly Reports

d. Instructions to Districts

e. Memos/Letters to IAC

f. Forms 1 through 6, and 10 through 14

g. Maintenance Survey of 81-82 Subprojects

h. Needs Assessment/Training Background Report (March 1983)

i. Evaluations of Pilot Training Programs

j. Selected Training Manuals (in Arabic)

k. Helwan Needs Assessment (in Arabic)

GOE

a. Government Contracting Documents (in Arabic)

b. Laws Pertinent to Contracting Process (in Arabic)

3. SITE VISIT OBSERVATIONS

The ISTI engineering consultant visited eight NUS subproject sites, four in Helwan District, Cairo, and two each in East and West Districts, Alexandria. Some of these subprojects were completed and in use; others were still under construction, allowing us to observe various stages.

The sites we visited are too few to constitute a meaningful sample of NUS subprojects. The TA Contractor has already completed a survey of the maintenance needs of 200 completed '81-'82 NUS subprojects. The purpose of our site visits was to check out first hand some of the problems noted in the earlier report. Wilbur Smith personnel arranged the site visits in Alexandria and escorted us to them. In Helwan we made known our purpose to the District engineer who arranged our visits.

Our site visits (with two exceptions) were made in Districts where we also conducted a general briefing, individual interviews, and a final debriefing and workshop exercise. This process enabled us to acquire through the interviews a sense of the dynamics of the NUS subproject management sequence (planning, design, costing, contracting, construction, completion and acceptance) and relate this with the output of the process observable in our site visits. Three of these site visits were to subprojects that are also the subject of additional evaluation case studies focusing on the social, cultural and political aspects of NUS subprojects. For these, we have been able to draw on this additional information being gathered by other members of the ISTI/SRC evaluation team.

We present the details of these site visit observations in Appendix C along with photos so that the reader may see precisely the sorts of construction problems that are common to buildings put up under the local government auspices. Basically, we saw the construction and maintenance problems one would expect from reading the TA

Contractor's earlier maintenance survey. It may be that a thorough survey of the more recent NUS subprojects will indicate a statistical improvement in the situation. Our few visits, however, indicate that most of the problems remain. For each construction site, we include both our own observations as well as those already filed by the TA Contractor's engineer. Everything we observed is well known and documented by the contractor personnel responsible.

Most sites suffer from shoddy finishing work of one kind or another. Doors and window frames and fixtures are usually bad, with door frames falling out of the wall, rusting hinges impeding operation, handles and closure mechanisms not operating properly, and other problems. There is a danger of applying American standards unfairly to these buildings. However, the exceptions prove that Egyptian public construction can be done at higher standards. We saw some sites with excellent door and window hardware and finishing work. Plumbing work is more often shoddy than not. Minor sloppiness in construction of joints and pipes guarantees sewer back ups and clogged toilets. We saw exceptions to prove that it is not inevitable. Uneven floors and stairs, and electric wires protruding are also common.

Plaster and wall finishing work is often in bad shape soon after the building is completed. At one site in progress, the workers were putting up plaster without wetting the wall. Neither he nor his supervisor had any idea that this will create no bond. One school site contains three buildings built in 1960, 1979, 1983. From the looks of them one cannot tell which is of what age. This reinforces the notion that there is a lot of unnecessary deterioration in the first year or two due directly to shoddy finishing work.

We saw only one building containing what may be serious structural faults. Most of the defects will be invisible once it is plastered over, so it is difficult to be assured that similar situations do not exist in other buildings. This building manifested almost every sloppy practice one could imagine. Edge beams on one side are wavy, up to 8" to 10" off center. A main beam was poured in two parts because the workers had stopped for lunch in the middle (their explanation). Wiring was left exposed, rebars exposed, etc. In discussions with the contractor, it seems that he does not understand how reinforced concrete gets its strength. This contractor had had

four NUS contracts. The TA Contractor had already flagged him as incompetent and recommended that districts not use him again. But the fact that the districts themselves repeatedly tolerated his work is distressing.

But we repeat that this was the worst case. Most sites exhibited the kind of sloppy finishing work which while detrimental to the buildings is also avoidable through supervision. The NUS sites we visited are for the most part at or above the local standard.

4. SIX STAGES OF DISTRICT PROJECT MANAGEMENT

Maintenance issues are inseparable from the whole process of subproject selection, design, construction, supervision, and operation. We take a sequential approach to subprojects, focusing on the process from beginning to end, identifying problem spots along the way. The emphasis is on understanding the Egyptian system in context, and viewing how NUS interacts with it. We divide the process of district project management into six broad stages, from subproject selection to subproject acceptance and maintenance, and review each stage in terms of who plays what role and what the major problems are. Obviously, each of these steps can be further divided. In the accompanying Responsibility Chart, we find it useful to block out nineteen separate steps.

4.1. Subproject Identification and Selection

In theory, subprojects can be suggested by practically anyone in the district from the poorest citizen to the district chief or chairman. As the NUS project is structured, the Local Council (al maglis al mahalli), also known as the Popular Council (al-maglis al-shaabi), is supposed to initiate the subproject identification and selection process. This council is made up of "elected" members who are residents of the local community. (See the District Decision Making and Community Involvement Report for a discussion of the role of the Popular Council).

RESPONSIBILITY CHART

KEY R-Principal Responsibility I-Information Only C-Consult./Opinion V-Veto	DISTRICT NUS FUNCTIONS				OTHER GOE	WILBUR SMITH	AID
	NUS COORDINATOR	CONTROLLER	CONTRACTING	ENGINEERING			
1. Sub-Project Selection Sub-Project Review	I→C→R I→R				V Popular Council V Executive Council	C	V
2. Initial Site Inspection				R	C Governorate C Ministry C Utility Authority	C	V
3. Initial Cost Estimate				R		C	
4. Exec. + Pop. Council Final Approval	I				V Popular Council		
5. Gov.Pop.Council Approval	I				V Popular Council		
6. Design Costing	I			R	C Min./Directorate C Utility Authority	C	V
7. Bid Prep. & Advertising			R	C		C	
8. Bid Review			R(Committee) A			V	
9. Bid Award & Contract	I		R(Committee) B				
10. Site Inspection/Turnover	I			R			
11. Construction Start				R			
12. Progress Inspections	I			R			
13. Progress Payments		R		C			C/V
14. Change Orders	I			R		V	
15. Change Order Payments		R					
16. Completion/Acceptance	I			R		V	
17. User Acceptance	I				R Service Dept. Utility Authority		
18. Acceptance Payment		R				V	
19. Turnover to User/O&M	I/R				C Service Dept. Utility Authority		

9w

In practice, we have found that it is usually the Executive Council of the district (al-maglis al-tanbeezi) that identifies subprojects to be considered for NUS funding. In some cases the subproject review and selection process involves the Popular Council only as a formality, but often, the fact of the potential veto of the Popular Council over the list of subprojects effects the mix of the selection.

Coordination between district administration and the Service departments, such as Education and Health, who operate completed NUS projects, is effected through the Executive Council of the district, where these service departments are represented as regular members. The service departments, though in the district, are not entirely of the district. Salaries of their personnel do not come through district administration, and they retain a strong loyalty and link to their own Directorates (mudirevaat al-khadamat) and Ministries.

Coordination with the Water, Sewer, Roads and Electricity organizations also occurs in the Executive Council. These organizations, though not regular members of the executive council, are invited to attend meetings when matters require their attention.

NUS funds are now being disbursed to subprojects more rationally than at the beginning. And subprojects, thanks to criteria developed by Wilbur Smith, are more fitted to priorities. We found a feeling in the district that they have learned, with the assistance of the TA contractor, the process of identifying subprojects, setting priorities and getting them approved by Wilbur Smith and the governorate. "For this we no longer need the help of Wilbur Smith," is a statement we heard that illustrates this feeling.

Although the District is generally satisfied with the functioning of the process of subproject selection and approval, dissatisfaction was expressed over the slowness of the approval process and Wilbur Smith's strong influence in the setting of priorities. A suggestion heard in one District was: "Instead of submitting subproject proposals in excess of what will be allocated by Wilbur Smith, we prefer to be told how much will be allocated so that we can limit our proposals to the funding available. We cost out many more projects than are approved."

4.2. Planning, Design and Costing

4.2.1. Subproject Planning

In the earliest NUS subprojects, very little attention was given to studying the physical characteristics of the proposed construction site (e.g., bearing capacity of the soil), access to required utilities (e.g., water, sewers), or potential users. As a result a number of projects ran into a variety of problems, which either increased costs (e.g., excessive foundations required), made the facility inoperable temporarily (e.g., no water or sewer connection), required its conversion to other more appropriate uses (e.g., markets built in an inconvenient location), or necessitated cancellation or abandonment.

These situations arose because relevant subproject and site selection criteria were either non-existent or were not being applied. Over the past two or more years, a rather complete set of criteria have been developed and put into place. For 1983/84 subprojects Wilbur Smith has instructed the Districts to meet specific criteria.

4.2.2. Subproject Design

Historically the main job of District building and construction engineers was to build small buildings and kiosks and implement small construction activities such as sidewalk or street repair and paving. These jobs were of small size and detailed engineering designs and plans were not necessary. Usually only a simple hand-drawn sketch sufficed.

With the advent of NUS, these District engineers were suddenly required to prepare engineering designs that had to meet the full range of governmental and professional standards and codes. Additionally, engineers are held responsible for their designs. One engineer admitted being incompetent to design and expressed unwillingness to be legally liable for designs prepared for NUS subprojects. In Alexandria engineers informed us that they are implementing (construction) engineers and would like to be relieved of the responsibility of designing NUS subprojects. Engineers and technicians generally also feel that they are now required to do a great deal more work for no more pay than before NUS.

Design capabilities do exist at the Governorate level in the Service directorates. The extent to which these capabilities are available to the Districts varies. Some directorates are slow to respond to district requests for design work.

Generally, in the past the design work was to be done by the appropriate service directorate. Much depends upon the competence, motivation, and self-assurance of the district engineer on the one hand, and on the resources and cooperativeness of the particular service directorate, on the other hand. In Helwan, the district engineer did much of the design work for the Ben El Ezbetein School's 1979 building as well as for the 1983 NUS addition. She also did the design work for the Kafr El Elw School building and renovation. Most of the design work for the East Helwan Youth Center's Nursery was done by engineers from the directorate of Youth and Sport. The clinic in Helwan was largely designed by the district engineer, but the clinic in Shoubra was entirely designed by the directorate of Health.

Occasionally under NUS, some of the design work for large projects is contracted out to private firms. However, Egyptian law is somewhat ambiguous with regard to when a government Department can contract for special services, particularly if such services can be obtained from another government agency. Thus not all District engineers feel that it is permissible to contract out NUS design. And should they adopt this as a general solution, the district will be left without needed design capacity in the post-NUS era when external funding is no longer available.

4.2.3. Subproject Costing

Procedure:

The costing methodology used by District engineers consists of the following steps:

1. Quantities of each construction item are estimated from the construction plan.

2. Unit prices for each item are obtained from the 1974 government pricelist documents.

3. Total official cost of each item is calculated by multiplying the quantity by the unit price.

4. In Alexandria (East District), the engineers adjust the official price to current market conditions by using the prices of the successful annual contractor for the district. These prices may still be low because the annual contractor is chosen on the basis of being the lowest bidder. In Helwan District, however, the engineering office does not make this price adjustment.

For the initial cost estimates on which AID funding is based the procedure used is to determine the approximate square meters of construction required and then multiply this figure by the going market price per square meter of construction. The cost per square meter used last year was approximately LE 120 per square meter.

Problems:

Subproject costing has shown some improvement. Nonetheless Wilbur Smith reports that it continues to be a weak link in the subproject preparation process. A district controller told us that underestimating is the NUS's most pressing problem. He feels that engineers don't spend enough time on costing and do only rough estimates. He cited the example of a subproject estimated to cost about LE 9000 that ended up costing LE 12000. Since the district has to get special permission from Wilbur Smith to transfer funds from another subproject, a process that takes a month, contractors are constantly pressuring for payment and subprojects are delayed. To resolve this problem he had suggested to Wilbur Smith that contingencies be built into subprojects but was told that AID does not allow this.

Another problem with costing is over design of foundations, frequently done because it is anticipated that extra stories will likely be added at some future date. In many instances, this is sensible, but often it is a luxury that cannot be afforded given the present desperate need for services.

Based on our brief interviews with district engineers and technicians, it seems that a major contributing factor to poor or incomplete costing is designs that do not provide the necessary detailed construction information from which the schedule of materials can be readily and accurately drawn. A Wilbur Smith source estimates that the capabilities of District engineers to do satisfactory costing and design is 50% to 70% of standard.

For 1983/84 subprojects, all cost estimates, as well as designs, will be reviewed by Wilbur Smith engineers before advertising for bids. District engineers are not numerous enough. Although their distribution has improved, the average district has only two or three engineers for design, costing and inspection.

4.3. Contracting Process

After the Engineering Office has prepared the subproject design and cost estimate, the Contracts Office prepares the bid documents. These documents provide the prospective bidder with information about the construction activity, including the plans, materials quantities and price, and the general conditions and regulations that apply to the work.

The advertisement for bids is published in the appropriate media and bids are accepted if submitted within the stated period of time. Both private and public sector contractors are eligible to bid. Over 90% of the NUS construction has been done by private contractors, of whom a great many are small firms. Generally the lowest bidder who stipulates conditions acceptable to the District is awarded the bid. All bidders are required to deposit one percent of their bid with the District. The bid documents are also sold to the bidders for a nominal fee. The winning bidder must then make an additional deposit of four percent for a total of five percent as a performance bond. If the winning bidder fails to meet this requirement and defaults, then the District can select the second lowest bidder and sign a contract at his price and require the lowest bidder to pay the difference between his bid price and the next lowest price out of his pocket.

A complete contract document should comprise: a) general conditions; b) specific conditions; c) detailed cost estimates; d) detailed working drawings. In fact, District engineers do not provide contractors with detailed working drawings but only with sketches or preliminary drawings. These lack electrical and sewage layouts; instead engineers give contractors oral instructions in the course of site visits.

Wilbur Smith is now requiring that their engineers review all contract documents before the contract is let.

The entire contracting process - from invitations to bid, through selection of the contractor, and signing of the contract - is governed by law. Two types of tendering are used: closed and open. In closed bidding, used more generally, bids are opened by a committee one month after advertising. This committee, after recording the bids submitted, passes the information, officially recorded, to another committee, which reviews the bids and selects the winning contractor on the basis of price and conditions. Sometimes the committee negotiates the conditions with the contractor.

Law permits the committee to award a contract to a bidder other than the lowest if conditions that he sets are more favorable. But potential pressure from the Popular Council, or an unpleasant experience, makes the committee reluctant to do so.

In open bidding only one committee is involved; it invites registered contractors to meet with it on a specified day, when it openly conducts bidding and negotiations. Open bidding is usually used when time is short.

After the selection committee has selected the winning bid, the District Contracts Office, which has overall responsibility for the whole contract process, notifies the winning bidder in writing.

Within a week after this notification, the winning contractor must make a deposit equal to five percent of the price bid. If the winning bidder fails to make this deposit, his original deposit qualifying him to bid is confiscated and bidding reopened. The cost of rebidding is charged to the defaulting bidder. When the bidder has made the five percent deposit, the contract is signed.

Recent instructions to the Districts from Wilbur Smith require soil tests prior to tender invitations. The District henceforth will engage a consulting firm to conduct such tests. The procedure specified by Egyptian law, according to a District controller, would be for a GOE unit outside the District to conduct the tests, but this might be very time consuming. The controller added that, since the money to be paid the private soil consultant is NUS funds, not GOE, he would not block the payment.

4.4. Construction Process

Once the contract is signed, the District engineer goes to the construction site with the contractor to inspect the site and ensure that it is in proper condition for construction to begin. If it is, then the engineer draws up a document delivering the site to the contractor, which is dated and signed by the engineer and contractor. The contractor can then mobilize his construction crew and move onto the site to begin work.

During the construction process, the District engineer or his/her representative should visit the site often to monitor the work and check on working methods, quality of materials and workmanship, and schedule progress. For certain critical construction activities, e.g., excavation for foundations and placing of concrete, the presence of an engineer is required. If the work is not done satisfactorily, the engineer can order the work to be dismantled and done over.

How frequently engineers and technicians visit sites to check the quality of construction is difficult to determine. District engineers, Wilbur Smith informs us, don't write field reports, and there is no standardized record of construction history and inspections, although this is required by Egyptian law. In our site visits we were able to observe serious structural defects due to improper work, e.g., exposed reinforcing bars and a pour interrupted in the middle of a reinforced concrete beam.

Such observations lead one to believe that engineers and technicians are not making required site inspections. A partial explanation for this is the lack of transportation for engineers. Both

District engineers and contractors complained of this. In some Districts contracts stipulate that the contractor provide transportation on jobs costing more than LE 5000. We heard objections to this practice on grounds of cost and ethics. District engineers say they do not like to accept transportation from contractors because the public might think they are receiving special favors. However, under certain conditions they will, e.g., when they have required the contractor to redo a job.

Apparently progress payments are not tied to the completion of a set percentage of a predefined project schedule. Instead progress payments are initiated from time to time by the contractor requesting the engineer to inspect and approve work accomplished. The timing of these progress payment inspections seem to be related to the contractor's need for cash. We noted a case where the contractor had been paid an installment in consideration of having completed brickwork, plastering and painting, when in fact only the reinforced concrete shell was complete.

Payments to the contractor are made by the District controller (al-morakeb al-mali), who opens the project account in a public sector bank when Wilbur Smith has sent funds, subsequent to subproject approval. The District controller, whose tie and allegiance to the Ministry of Finance is quite strong, does not attend meetings of the Executive Council and therefore must consult constantly with the NUS coordinator. One District controller stated that, since his supervisor in the District knows little or nothing about NUS, he does not report to or consult with him regarding NUS projects. This controller has found that using accounting procedure for NUS that are different from the GOE's is only a minor problem, since he is familiar with both American and Egyptian accounting procedures. A more important problem, he states, is the amount of additional work caused by the greatly increased workload that has come with NUS. Whereas GOE funds handled by him last fiscal year amounted to only LE 120,000, NUS funds were LE 600,000. The incentive pay received for this extra workload was minimal, he said, and not at all in proportion to the extra work.

A major problem for him is the requirement of constant checking with Wilbur Smith. He feels the District should have more autonomy in the handling of NUS funds: for example, in transferring funds from one

subproject to another. A Wilbur Smith source, however, feels there is excessive switching of funds from one project to another "done with our approval." Another major problem identified by the controller is the conflicting instructions regarding payments to contractors. These come from the District engineer, the Service Directorate engineer, and the AID or Wilbur Smith engineer. He feels the roles of each should be clearly defined to avoid confusion and contradictions. Since contracts are between the District and contractors, he usually heeds the District engineer.

Contractor performance with respect to quality of construction and on-time completion can be expected to improve with the recent introduction of pre-qualification of contractors. The basis for qualifying contractors is the performance ratings that have been carried out by Wilbur Smith. Many subprojects have suffered from defective construction and incomplete work, which has delayed acceptance and beginning of operation. Even a month's delay is awkward when students have been registered and are waiting for a classroom to be completed before beginning school. In cases, subprojects have been accepted which should not have been because of the difficulty in getting contractors to remedy defects and complete the job.

Wilbur Smith states that it involved District engineers in the rating of contractors. But one District engineer complained that the rating was done entirely by Wilbur Smith. A District controller pointed out that the ratings have blacklisted 90% of the contractors and this will hamper the District in contracting for subprojects.

4.5. Completion and Acceptance Process

When the construction job is completed, the District engineer accompanied by the Service Directorate's representative, goes out to inspect the structure. The engineer will note any defects and if they are minor he will accept the building while withholding payment for the excepted items.

In the past buildings have sometimes been accepted by the District engineer without the Service Directorate representative being present. In some cases this created a problem because the Service

Directorate's representative would not accept the building for operation. This occurred in the case of Bein El Ezbetein school, which after completion was accepted by the District but not by the Education Directorate representative. The school was put into operation for the 1983/84 school year. During the delay between completion and first use, however, much damage was done to the doors and windows as well as the sewer system, which was built under a separate contract. Now that the one-year construction guarantee period is expiring, the District has to determine how much of the damage is the result of poor quality work and how much is due to abuse. The question of acceptance by the Directorate of Education also remains to be resolved.

Though the District does send to Wilbur Smith a Form 4 stating that the subproject is completed, there is no standardized form and procedure for completion and acceptance used by the GOE for its own recording, information, coordination and management needs.

For 1983/84 subprojects the District engineer is to be accompanied by a Wilbur Smith engineer when making the final acceptance inspection. In Alexandria the plan is to have not only a Wilbur Smith engineer but also the Service Directorate engineer participate in completion inspection and acceptance. This proposal, if fully implemented, will effectively eliminate the type of non-acceptance problem faced by the Bein El Ezbetein School in Helwan. It may also remove one of the causes of contractor dissatisfaction, which has caused contractors to lose interest in bidding on NUS subprojects, namely, non-payment for subprojects accepted as completed by the District but not by the Service Department.

4.6 Operation & Maintenance

Once a subproject has been accepted by the District and the relevant Service Department or utility body, the facility is officially turned over to that body to operate and maintain. In the case of schools, health facilities and youth centers, the relevant Service Directorate in the Governorate accepts the responsibility. If the project concerns a public utility such as water supply, sewers, roads

or electricity, then the relevant utility organization assumes responsibility for operation and maintenance. In many NUS subprojects there is a need to involve both a Service Directorate and a public utility organization. For example, the Kair El Elw School was turned over to the Education Directorate to operate and maintain the buildings, but the Water Authority accepted the responsibility to extend their distribution network and provide water service.

Presumably both the operation and maintenance of NUS facilities continue to follow the existing systems established in the relevant Directorates and public utility organizations. Under this arrangement, the District does not have responsibility for either operation or maintenance. The GOE contribution for maintenance of NUS subprojects, however, has been sent to the Districts. An alternate system, whereby the District will be responsible for maintaining NUS built facilities, is being proposed, but how it will operate is not known at present.

The existing maintenance system of the District is managed by the Housing & Reconstruction Department (mantekat al iskan wal mashrou'at), also called the Engineering Department. This office receives an allocation of funds annually to provide maintenance services to all District managed buildings. Through the normal bidding process the District awards an annual maintenance contract. The winning contractor performs the maintenance activities as directed by the Maintenance unit of the Engineering Department. The staff are responsible for inspecting District facilities and receiving maintenance requests from the users of these facilities. The maintenance staff prepares an estimate of the work and instructs the annual contractor to do the work. If the annual contractor is too busy to perform the work, the District may contract or hire another company to do it. When the allotment of funds for maintenance is less than needed for all maintenance activities, only the more urgent jobs are done and the rest is carried over to the following year. The annual budget or allocation for maintenance is as little as LE 3000 per year.

Because the 81/82 fiscal year was already terminated when the GOE made its first contribution to NUS subprojects maintenance, Districts did not receive the contribution for 81/82 subprojects. Instead they

have received the entire 10% contribution for 82/83 subprojects. This amount is not immediately needed in these projects, so the District is keeping this 82/83 contribution in a non-interest bearing account. The amount one District has received for maintaining 1982/83 subprojects amounts to roughly twenty times its regular maintenance allocation for the year.

In the preceding we have identified the weak links in the chain of events leading up to completed NUS subprojects. Incompetent or negligent contractors, not controlled by District engineers, have erected structures that already suffer from serious "maintenance" problems, better called repair of defective or incomplete construction. Wilbur Smith has found (Survey of FY 81/82 Sub Project Facilities, May 1984, p. 8) that 32% of the first year's projects, just now emerging from the one year warranty period during which the contractor is still responsible for maintenance, need repair or rehabilitation; 53% require some kind of improvement. (Later reanalysis of this data by the TA contractor claims that the percentages of subprojects needing maintenance are considerably lower.)

AID and Wilbur Smith engineers have developed a MAINTENANCE/REPAIR COST ESTIMATE form to be used by the District for NUS subprojects. Exactly how this form is to be used is currently being worked out. (See discussion in section 5.3 of this report.)

5. THREE CRITICAL ACTIVITIES

Three activities are critical problem areas which detract from the quality and durability of NUS sub-projects. These activities - supervision, design, and maintenance procedures - are the focus of much of the technical assistance. A review of these problems reveals the complexity of the NUS task and helps provide a realistic basis for the assessment of whether current NUS programs are likely to improve significantly the local capacity for project management by the time of the currently scheduled end of the NUS endeavor in 1986.

5.1 SUPERVISION

Problem:

There is a chain of inadequate supervision that begins with the relatively low level of training and supervision of construction workers by their employers, followed by inadequate site inspection by the district engineering staff, and weak control over contractors by local government. This lack of supervision is responsible for much of the poor quality work which quickly becomes a maintenance problem. Most of this relates to "minor" issues such as finishing, but occasionally lack of supervision results in possibly dangerous situations.

Analysis of the Problem:

(a) Low skill levels of workers. Due to out migration in recent years and to an expansion in domestic building construction, competent skilled and semi-skilled labor is currently at a premium in Egypt. There is no reason to assume that NUS contractors, generally small firms because of the modest size of NUS subcontracts, can hire and keep the best in competition with larger firms building for the private sector.

(b) Contractor supervision of laborers. Less experienced construction workers need more experienced and more vigilant supervision. The evidence is strong that this is often not provided by NUS contractors. (See section on Site Visit Observations.) It is reasonable to assume that experienced foremen are also difficult to secure at present.

(c) District engineers' site inspections. District engineers do not visit construction sites often enough. Legally, a representative of the district engineering office is required to be present during certain critical procedures such as pouring concrete. Generally for this, the district engineer does not go personally but sends a subordinate technician.

The most often cited reason for the inadequate inspection visits is the lack of transportation. There are other factors. District engineers expressed the view that it is the obligation of WSA engineers to supervise these NUS projects, since they are highly paid while the district engineers receive no extra pay for this extra work. Engineers also complain that their critical reviews of contractors are usually not acted upon by higher authorities.

(d) The district government has difficulty exercising control over its contractors. Partly this is because contractors seem to have some political influence. Practically, once a contractor gets half way into a project, it is expensive and difficult to rescind the contract and turn it over to another firm. Also, other firms may refuse to take up such a job. Overall, it is this lack of district government's clout over contractors that creates a climate of lax supervision of daily construction work quality.

Solutions:

Most suggested solutions stress the transportation issue. The GOE personnel seem to want AID to provide cars. AID maintains that the GOE should make its own plans to solve this transportation problem. AID Management has suggested to the NUS Steering Committee that they should purchase motorcycles with sidecars as an inexpensive way to get its engineers to the field. Engineers may feel that this is beneath their professional dignity. Nothing has been resolved on this.

One partial solution that has been adopted is to write into the district contract a clause that makes the contractor responsible for transporting the GOE engineer to the site for inspection. The engineers complain that this reduces what little clout they have over the contractors and also gives the impression to others that they are under the influence or in the pay of the contractor.

Another solution is for the district to reimburse engineers for taxi fare for site visits. This is done to a limited extent, but there is no standard system that would encourage engineers to make any "extra" site inspections.

Prognosis:

There is no simple solution to this problem of supervision. The TA contractor and AID project management are working to solve four aspects of the problem. First, they are working with the districts to improve the quality of the contractors selected to do district work, mainly by weeding out those who have performed badly in the past. Second, they are trying to address the transportation issue, although we doubt that motorcycles will prove an acceptable solution. Third, they are trying to negotiate a system of incentives to recompense district engineers for the additional NUS work. This may help the NUS sub-projects but will not address the long term issue. Fourth, WSA engineers stress repeatedly the importance of site inspection and set an example by taking district engineers to the sites. However, these attempted solutions are limited and not articulated as part of an agreed upon attack on the problem of construction supervision. It is difficult to be optimistic that the situation will be improved in a permanent way by the end of NUS.

5.2 DESIGN

Problem:

NUS calls for the design of about one thousand buildings and structures of a certain size - i.e. at around LE 80,000. Much of the later problems with buildings stem from original design. One sees projects designed in ways that are inefficient, inappropriate, or inadequate to a certain degree. Sometimes old standard designs are

pulled out of drawers, dusted off and used with little or no adaptation to the special circumstance or to recent changes in availability and prices of materials. The plumbing and electrical aspects of many designs are inadequate. Often foundations are built to support future expansion that may never take place at the expense of providing immediate badly needed extra rooms.

Analysis of the Problem:

(a) Technical skills. Engineers are in short supply in the public sector. Design engineers are particularly scarce. At the district level, engineers generally lack the experience for designing larger structures. At the governorate level, some service directorates have design units in their engineering departments, but these ministries vary in their degree of competence and creativity. The Ministry of Education seems to be the weakest. Their standard designs are unimaginative and under-detailed. They regularly add classrooms to schools without expanding the WC facilities. The Ministry of Health seems to respond better and be more innovative in designing new clinics. However the TA contractor notes that their record is less even than Education's. They produce some of the best designed buildings and some of the worst. The design capabilities of the governorate level service directorates also vary from governorate to governorate. Education is stronger in Alexandria than in Cairo. In any case, the design work for NUS projects is rarely satisfactory, often consisting of very rough sketches with some dimensions indicated. The TA field engineer more often than not must help complete the designs.

(b) Accountability. Engineers are often reluctant to take responsibility for design of a building because once his or her name is signed to the design he or she may be held responsible for future mishap. So there is a strong tendency for engineers, even if competent to do design work, to try to pass the task on to someone else.

(b) Responsibility. One temporary effect of NUS has been to muddy the water as to who is responsible for design work. The district engineers try to get the relevant service directorate to send them a design for an NUS project. The service directorate design engineers are often slow to respond since the district NUS project may not be high on

their priority list. One finds one NUS clinic largely designed by the health directorate engineers and another NUS clinic largely designed by the district engineer.

Solutions:

(a) Create a small design section in the district engineering office. This would involve persuading the Ministry of Housing to shift some of its better engineers to work in the districts, or it would call for some serious skills training.

(b) Increase the design capacity in the most relevant service directorates so that they can handle the increased demand from districts.

(c) Contract out design work on major district subprojects to private firms.

(d) Create a small and highly skilled mobile engineering unit in the directorate of housing to provide technical assistance to the districts similar to the support the districts now receive from Wilbur Smith engineers.

Prognosis:

Overall, the solution to the design problem depends on the future arrangement the GOE has in mind for district level construction activity. After NUS, will construction revert largely to the service directorates or will the increased role of the district staff be a remaining legacy of NUS? The work of the TA contractor to date has tried in several ways to strengthen district design capacity and has also had some success in influencing the design approach in some service directorates. They have also encouraged some districts to contract out some design work, however it seems unlikely that districts will do this for non-NUS work. Nonetheless, one can be optimistic that the NUS experience is slowly having an impact upon the quality of design work in some districts - especially on some of the little details that can make a big difference to the usability and durability of the structure. Combinations of some of the above proposed solutions are doable and GOE engineers at both the local and governorate levels recognize the problem and the possible solutions.

5.3 MAINTENANCE PROCEDURES

Problem:

It is no secret that maintenance is poorly performed on public facilities in much of Egypt. Maintenance is complex in that it consists of four different levels or activities: (a) cleaning, (b) routine replacement and minor repair of fixtures, (c) periodic structural repairs and refinishing, and (d) emergency repairs. Furthermore, different kinds of facilities or systems have very different maintenance requirements and very different consequences should maintenance not be performed. All service directorates and districts have small maintenance budgets and some specialized units responsible for such work, but generally the budgets have long been woefully inadequate and the maintenance units understaffed. The habit of deferring maintenance until the point of crisis is now ingrained.

Analysis of the Problem:

NUS projects are largely turned over to the appropriate service directorate for operation and hence maintenance, yet the NUS maintenance funds are distributed to the districts.

Some NUS projects are additions to existing structures. Does this mean that the four newer classrooms of a school will receive maintenance while the rest of the building is allowed to deteriorate? Or that one room will be painted out of one fund and another room from another fund?

Are NUS Maintenance funds to be used as part of a program of preventive maintenance (if so there is no program), for routine replacement, or saved for major structural repairs and refinishing?

Because of the one year warranty period, there should be no need for maintenance during the first year. Yet many buildings are accepted in a less than finished state and the Districts are unable or unwilling to force the contractors to complete the

task. The result is that future maintenance problems are exacerbated by early neglect of minor details.

The maintenance fund is provided by the GOE as part of its contractual agreement with USAID for NUS. To date, the GOE has been slow to release these funds and relatively uninterested in taking up the responsibility for maintenance.

Solutions:

AID project management and the TA contractor are introducing a system to assure the maintenance of NUS structures and to provide a systematic means of allocating funds from the overall maintenance fund to meet specific maintenance needs. The system is rational in that each district will do a survey of its NUS subprojects and list and cost the needed maintenance activities. This amount will then be requested from the fund and the District will arrange for the work to be done. Most districts will probably contract out the work through a bidding process or have their "annual contractor" perform the work.

Prognosis:

Although this system will probably provide maintenance for NUS projects for a few years, neither this system nor the TA work in general is doing much to institutionalize systems of preventive maintenance for District construction projects. (An important exception is the TA contractor's work regarding the maintenance of heavy equipment.) Nor do we see a program aimed at strengthening the district's capability of handling emergency maintenance.

Maintenance is one area where NUS, as it is currently constituted, may be weakening the GOE's institutional capacity for maintenance by setting up a temporary, alternate system, outside of the normal channels (which exist but are short of resources).

AID project management and the TA contractor are perceptively aware of the nature of the problem and plan to address it in a more comprehensive way during the next phase of decentralization programming.

6. TEN COMPONENTS OF ORGANIZATIONAL CAPACITY

In this section we present a model of what makes complex organizations operate effectively. The reader will notice that these ten components of organizational capacity all respond to different sorts of solutions. Some respond to individual training programs. Some demand high level decisions about the organization's objectives. Others call for reorganization. And some are addressed by higher salaries. Of course real organizations are far from perfect and this is a "diagnostic" model to help pinpoint which aspects of the organizational problems are solvable under current conditions, and which aspects must be lived with at what cost. Of those which are solvable, or partly solvable, which components demand what sort of approach?

Let us elaborate. Even highly skilled individuals, unless they are motivated and clear about the job they are to do (4 and 5 in Diagnostic Performance Model), will not translate their skills into productive work. In addition, individuals cannot concentrate their efforts where they will produce results important to their organizations before their organizations formulate priorities and objectives understandable to them (6). In a large organization the efforts of individuals accomplish much more if they are supported and reinforced by systems and procedures (7), and are coordinated by linkages and channels of communication and cooperation between organizational units (8). Physical resources (9), such as equipment, tools and transport, as well as human resources (10), e.g., sufficient numbers of personnel and contractors capable of doing quality work, are also requisite..

The NUS Project addresses all of these individual and organizational components, but with varying degrees of success. In the following pages we review each of these components, giving the nature of the problem and the ways NUS addresses the problem. We view these comments as a beginning, not the definitive analysis of the organizational problems of urban public administration. Others involved in NUS and Egyptian public administration could fruitfully use this model as a basis for continuing analysis and debate.

The NUS training program (on the job, and classroom) addresses mainly the area of individual skills. It is aimed at improving con-

DIAGNOSTIC PERFORMANCE MODEL

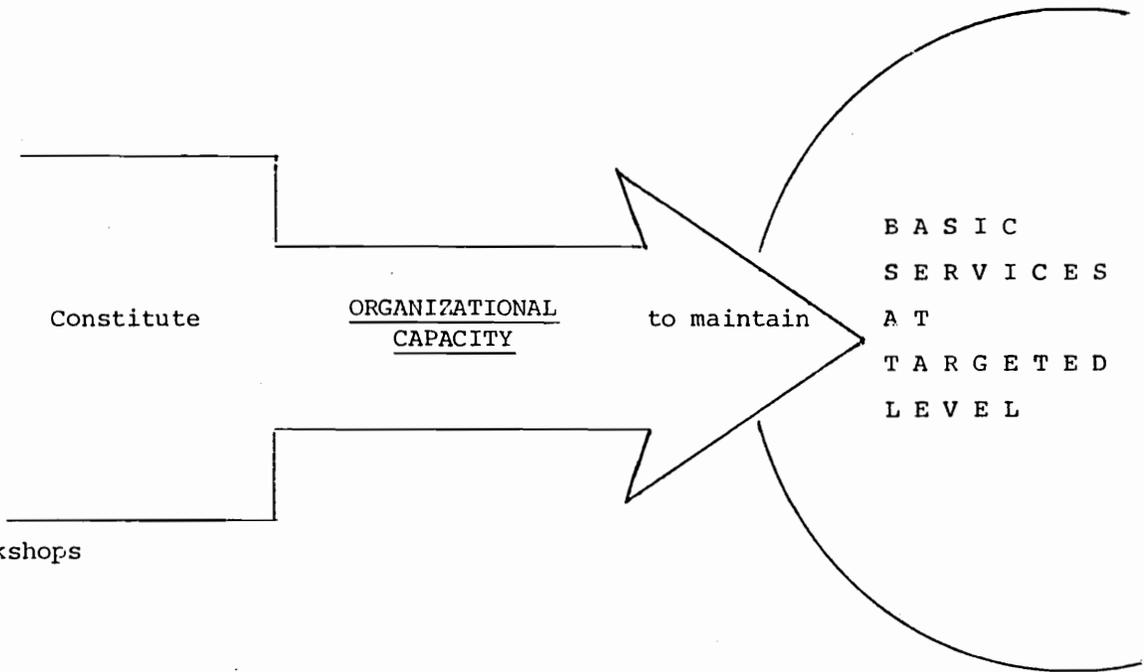
TEN COMPONENTS OF ORGANIZATIONAL CAPACITY

- 1. Conceptual Skills
- 2. Interpersonal Skills
- 3. Technical Skills

Respond to:
Training

- 4. Motivation
- 5. Job Clarity
- 6. Objectives
- 7. Systems + Procedures
- 8. Linkages
- 9. Physical Resources
- 10. Human Resources

Respond to:
Incentives
Reorganization
Team Building Workshops
Reallocation



ceptual skills (1) and reviving and sharpening technical skills (3). The program does little to improve interpersonal skills (2) nor to remedy major deficiencies in technical skills. The possible accomplishments of a training program are by definition limited. A few days training cannot compensate for deficiencies of a university professional program or for years of rusting on the job, or for organizational blockages, or for lack of incentive and motivation.

Motivation (4) is a major problem facing all branches of the public bureaucracy in Egypt. Salaries are low, jobs are secure, and advancement is more by seniority than by performance. NUS addresses this problem largely by trying to negotiate the distribution of the incentive fund by the GOE. Like the maintenance fund, the incentive fund is part of the contractual obligation of the GOE to NUS, and the GOE has been slow to fulfil this obligation. Although these incentive payments will help defray some of the complaints of NUS overwork, they are too little, too late, and too temporary to have a major impact on the morale of district staff.

Good managers have a number of means (positive and negative) to increase the motivation of their people - recognition through awards, personal compliments, making tasks more interesting and meaningful, negative performance reports, hearings, etc. An informal management training workshop for district chiefs would encourage them to list, formulate, and discuss the pros and cons of better combinations of these carrots and sticks. At first it would be difficult to persuade the busy district chiefs all to attend such a workshop. However if one began on a voluntary basis with a few of the more sophisticated chiefs and they found the sessions useful, others would request such sessions.

Job Clarity (5) is an area where the TA contractor has been working to introduce a stronger sense of accountability and responsibility for given tasks. In the district government units, individuals are generally quite clear about their tasks. The problem is that personnel are often too narrow in their sense of their responsibilities, a legacy from the bureaucratic tradition. The training programs of the TA contractor address this by reviewing the whole process of project management and broadening the individual's conceptual skills.

In this area too, a management workshop for district chiefs could consider ways of encouraging and allowing subordinates to have a practical definition of their jobs in terms of problem solving.

Objectives (6) The NUS process has helped local government firm up its objectives of providing services to people in the form of increased public facilities and increased responsiveness to local needs. There is a long way to go before there is agreement on the practical objectives of district level government versus governorate and national ministerial levels. AID management and the TA contractor's continuing dialogue with governorate and district officials is contributing to clarifying these objectives. Senior governorate officials have clearly come to appreciate and rely upon many aspects of the NUS approach. The SRC interviews in the districts exhibit a striking improvement in the practical attitudes of district staff regarding their overall task and what they need to accomplish it.

In the Phase I evaluation report, ISTI/SRC noted that the objectives of NUS in terms of capacity building or decentralization of activities are not spelled out specifically. NUS has now built up credibility with governorate and ministry officials. The AID Mission is currently embarking on the negotiations regarding the future (post NUS) urban development and decentralization projects. This provides an appropriate opportunity and some leverage for spelling out practical objectives - what is expected to be in place at the time of phaseover to the next round of projects. What tasks are expected to be carried out by what level of government at what level of efficiency.

Other aspects such as revenue generation and budget distribution must be negotiated at higher levels.

Systems and Procedures (7) is the area where the TA has been most active and most effective. A number of engineering and accounting forms have been introduced and these are being used for all the NUS subprojects as well as often being used by the district for its own non-NUS budget and projects. During the first evaluation of NUS in 1983, there was a great deal of complaining in the districts about

these forms which were seen as unnecessary. In our current interviews we find little trace of this resistance.

Regarding building local government capacity one has to question the extent to which NUS builds a separate system of procedures and forms and thereby weakens the organization in the long run, or is actually strengthening the organization's procedures. There are some obvious trade-offs here. In some instances, the new procedures are not new at all but have long been on the books of the GOE regulations. NUS strengthens these by insisting that they be followed. In other instances there were general obligations on paper which until NUS had never been specified and implemented. There is other reporting that is unique to NUS because of the need of AID to account for the expenditure of its funds. So far, the NUS procedures are followed because Wilbur Smith insists upon it. There is some evidence that governors and other senior GOE officials are coming to appreciate the systems and procedures and will themselves insist upon them after the departure of the TA contractor.

Linkages (8). NUS has focused on improving vertical linkages between the governorate and the district chiefs, and to a lesser degree, between the governorate level directorates of ministries and their district level departments. The weakness of NUS to date is that it has had inadequate impact upon improving the horizontal linkages "within" the district organization. Most service department personnel identify with their ministry more than with their district. The ministry is the source of salary, promotion, and professional pride and recognition when that exists. Strong district chiefs are able to counteract the centrifugal tendency of the service departments to some degree.

Several activities and factors could improve horizontal linkages and a sense of district unity.

Because the district chief is pivotal, this problem can be partly addressed as another item on the agenda of a management workshop. The TA contractor in the Mid-Project Report (draft) states the intention to focus more attention on the district chief in this regard during the remainder of NUS.

Weak horizontal linkages also respond to "team building" type workshops. Although our two district debriefing workshops were not designed as team building activities, group discussions of issues cleared some misunderstandings among district staff and resolved some problems of horizontal communication. Much more could be done along these lines using relatively modest training resources.

Some districts have managed to get all or most of the departments under one roof. In other districts, they are scattered in separate buildings often quite distant. If the GOE is serious about an increasingly active and coordinated role for district government, spatial consolidation should be a goal.

Physical Resources (9). NUS has addressed this aspect of organizational capacity through its special program of office equipment and other activities such as the large equipment maintenance program. AID is attempting to address part of the transportation issue by negotiating for the GOE to provide motorcycles for its inspection engineers. In spite of complaints about transportation, physical resources do not seem to be a major impediment to organizational capacity of local urban government. However, we repeat the above mentioned need for consolidated district offices.

Human Resources (10). The chief scarce commodity is well trained engineers. One way NUS has addressed this issue is by demonstrating the irrational and inequitable distribution of this scarce resource among districts. It is important that the GOE has responded by reallocating engineers to an extent. The training program now underway, while no panacea, strengthens the human resources working in the districts. The most important outcome of NUS has been that it has demonstrated that the district human resources, in spite of their shortcomings, are adequate to carry out an ambitious construction program if they are provided with some backup support. One problem solved by NUS was the undervaluation of the human resources at the lowest levels of the public bureaucracy.

7. WHAT CAN BE DONE?

A number of practical solutions and suggestions were proposed during interviews and debriefing meetings. It is our task to pull these together to identify a clear programmatic direction. We make no effort here to credit ideas to anyone or any organization, nor to take credit ourselves. We do feel that the very process of this evaluation exercise has helped crystalize all the participants' thinking about practical approaches toward meeting NUS goals. We pull together the suggestions into three broad recommendations.

7.1 Workshops:

The TA Contractor should include in its training program two kinds of workshops, management workshops for district chiefs and team building workshops in the districts for district professional staff.

Discussion:

We have already referred to such workshops in the previous section. To put the situation in a broader perspective, one can understand the problem currently facing local government by postulating a contrast between two organizational models: the bureaucratic model versus the problem solving model.

In the bureaucratic model that served well enough in the simpler world of the past, higher level personnel, called "officers," are expected to concentrate on the enforcement of rules and regulations; their scope of responsibility is limited and information, or better, orders, come down to them from above through the line of command. Lateral or horizontal linkages are weak.

In the problem-solving model "managers" are given broad responsibilities that are not sharply defined except in terms of producing specific, often quantified, results. Information flows up as well as down, and horizontally as well. Lateral linkages, which enable different units to join hands in attacking problems, are extensive and strong.

The GOE has begun to move away from the bureaucratic model regarding local government and the provision of public services. Indication of this deliberate movement towards a problem-solving model are decentralization and the delegation to governorates and districts of responsibilities formerly retained by central government ministries. At the district level the new structure specifically requires lateral cooperation among a number of semi-autonomous service departments to respond to local needs. Every NUS subproject requires significant cooperation among three or more governmental units.

Management Workshop for District Chiefs:

The district chief is pivotal to this local problem solving process, and for this reason one type of workshop should focus on helping him to understand his management options and improve his skills at maintaining lateral linkages among the units of his domain. It is an axiom with NUS that the presence of a good district chief is the most relevant factor in the level of performance for a district. What is proposed are semi-formal meetings of small groups of district chiefs to discuss and share ideas of effective management—how to motivate people under the difficult conditions of the civil service, how to coordinate with service departments and water authorities, how to create a team out of disparate unit representatives.

There are several problems to acknowledge. First, the district chiefs are busy and it will be difficult to persuade them to give up the time. However, if several volunteer and then find the experience worthwhile, others will be requesting to attend. A more serious problem is the relatively frequent transfer and retirement of district chiefs. As with the training program, successful workshops will need to be institutionalized so that periodic sessions can be held for new personnel.

Team-Building Workshops:

The other type of workshop is a team building exercise to take place in the districts for district personnel. These might follow the workshop for the district chief. The team building exercise could be carried out much as we carried out our district studies and debriefing/workshops— a "facilitator" comes to the district and briefs

the staff, then conducts individual interviews, and accompanies staff on site visits, and then holds a final meeting where the group as a whole confronts issues and discusses problems.

Such workshops are no more a panacea than are the individual training activities. But they do address the problems of horizontal and lateral linkages and communication, motivation, job clarity, and problems solving, some of which are not addressed otherwise.

7.2 GOE/AID Agreement On NUS Objectives

AID Project Management should try to use the negotiations concerning the next phase of urban projects as a context for securing a better understanding with the GOE as to the practical objectives of NUS.

What responsibilities, resources, and capabilities are expected at the district and governorate levels of local urban administration at the time of phaseover to the next round of urban development programs? What will be the starting point for stage two of urban assistance? We have in mind the issues about which levels of administration will perform what service tasks, as well as the yet outstanding issues of incentives and maintenance responsibilities. Earlier in NUS it was not possible to reach such agreements because the possibilities of local level accomplishment were not generally accepted. This has changed, although it is still difficult. The context of a phaseover plan, upon which future funding depends provides a strong forum for reaching these necessary agreements. There has been progress in this dialogue, but it is likely that no such agreement will emerge. If not, this fact has important implications for what sorts of future urban projects are feasible.

7.3 Phaseover Plan

AID Project Management and its TA Contractor should formulate a program for phasing over NUS to the next stage program for urbanization and decentralization.

There is currently considerable debate over the shape of this next stage of urban assistance, including disagreements as to whether the current NUS program should be extended largely as is, radically transformed, or allowed to terminate on schedule. It is not the evaluation team's intention in the present instance to prejudice this discussion. But regardless of the decisions reached, an agreed upon phaseover plan drawn up soon will (a) help specify the practical objectives expected from this phase of NUS, (b) place these objectives on a timetable, and (c) program the transformation and/or phase out of foreign technical assistance.

Timetable. By definition, a phaseover plan should have a timetable. Built into the timetable should be a period of experimentation with pilot phaseover activities, special workshops and orientation programs for the upcoming order, personnel shifts, etc.

Phaseout of foreign technical assistance. There is no disagreement among the parties that TA will end at one time or another. As part of the phaseover plan, a plan for the transfer of certain TA tasks to the GOE and the cessation of others is essential.

One notion is that after NUS, the NUS coordinator in each district would assume the role now played by representatives of Wilbur Smith. This does not strike us as entirely realistic as it is hard to imagine this person having the clout of Wilbur Smith nor the broader knowledge of what is happening throughout the system.

Another suggestion is for the Directorate of Housing in each governorate to set up an elite, mobile engineering team with a vehicle to carry out the support and monitoring functions now done by WS engineers. This sounds plausible as it would come close to replicating the current TA work (for engineering) and do so within the normal support channels of the GOE. Part of such a plan would include a program whereby the foreign technical assistance team would train these units in each governorate, work with them for awhile, and then phase out.

The phaseover plan is not intended to lock the program into a narrow path. Naturally, each step will have to be negotiated to a greater or lesser degree with participating organizations. Some aspects will work, some will not. Some will meet with cooperation,

some with resistance. However, a plan on paper would be an excellent starting point. AID should work with its TA Contractor to draw up several scenarios, with the implications of each, and present these for discussion to the NUS Steering Committee.

All of the above three recommendations are in fact taking place to one degree or another. The dialogue with the GOE goes on and there has been some progress. AID Project Management is working with its TA contractor to add district team building workshops to its training program. Additionally, there is now the beginnings of pilot programs for pulling out and altering the mix of Technical Assistance in selected districts. It is all time-consuming and difficult work for parties already stretched in resources. As NUS goes into its final period, these three activities should take precedence over the efforts to assure the satisfactory completion of subprojects.

Appendix A

DEBRIEFING WORKSHOP IN DISTRICT

The discussion in the workshop was organized according to three lists, on three separate pieces of paper, listing NUS "Accomplishments", "Problems", and "Proposed Solutions". For the most part, the items on these lists had emerged in interviews individually held with the workshop participants. Present at the workshop were the NUS Coordinator, Director of Finance, Director of Maintenance, Chief Engineers, and Contracts Officer. The Secretary General and the District Chief were asked to be absent to allow for a freer discussion. This, they understood and their cooperation contributed to the success of the workshop.

A. Accomplishments

Accomplishment 1: Improved district management in NUS projects as compared to previous years

The NUS coordinator (who was trying to dominate meeting) immediately agreed that district management of NUS projects has definitely improved. Finance officer disagreed stating that with regard to financial affairs conditions remain unchanged. Engineers said there should be more follow-up visits on part of WS engineers. It is true WS engineers visit project sites but they should do so more frequently and should inform us of their observations and remarks. NUS coordinator stated she passes WS remarks to engineers. Engineers agreed that NUS coordinator does so; explained that WS engineers visit the project sites alone and then report to the coordinator who passes the information to them.

They suggested that the WS engineer should not visit the project sites by himself but should be accompanied by a district engineer on these site tours. Also his observations and remarks should be relayed directly to them. One engineer also requested

there should be more cooperation between the district administration and the engineering department referring to having the engineers involved in project selection.

There followed a discussion of project identification and how original cost estimates are made, When they are made in the NUS process, and relations of costing procedures to NUS funding.

For initial funding a rough estimate of project cost is made by district engineers based on cost per square meter (LE. 120/m² used for project estimates last year) and not on basis of the detailed design specifications. NUS coordinator then presents the cost estimates and projects proposed to Popular and Executive Councils for review and approval. List of approved projects is then sent to Govenrorate leel popular council.

Once the proeject is approved, the project's detailed specifications and cost estimate based on Form I is prepared and goes to WS for review and approval. Procedure was different in the past two years, only the rough cost estimate based on cost per square meter was prepared and designs and detailed specifications were not developed except after NUS funding was received by district.

NUS funding for the district approx. 640,000 annually.

Accomplishment 2: More effective disbursement of NUS funds.

General agreement

Accomplishment 3: Updated criteria for project slection and contractor selection.

General agreement

Accomplishment 4: Non-obligation to accept low bid- low bid/best conditions.

Financial officer said low bid/best condition has always been in effect but stress has always been on lowest price.

What can be considered an accomplishment is that the new law requires the district to investigate and verify the financial and technical qualifications as well as the good reputation of a low bidder before awarding a contract to him. District can ask bidder to present a bank statement indicating amount of available cash on hand, record of previous work accomplished, etc. A special committee can be established to review contractor's financial and technical background.

Maintenance officer commented that this has always been in the law but that now there is stress on implementing it.

Contracting officer said, that the issue under discussion should be listed as a problem and not an accomplishment. Financial officer admitted that small contractors don't have the financial resources nor the experience. Also that the law is vague in many respects.

Participants complained about interference of the Popular Council in the district's affairs.

District chief has the authority to reject any bid but due to the pressure from the Popular Council he does not exercise this right.

Contract officer stated that no one wants to bear any responsibility and consequently even a bad contractor can not be disqualified. So for whatever reason there may be, we cannot reject the lowest bid.

Maintenance officer stated that one time the contract review committee recommended that the lowest bidder for the annual maintenance contract be disqualified. However, the Popular Council objected and low bidder was awarded the contract anyway.

Financial officer said the gist or summary of the above discussion is that the constant interference of the Popular Council in the affairs of the executive branch (GOE) has adverse effects on contractor selection.

Accomplishment 5: Availability of stricter rules for soil investigations to reduce cost overruns.

All participants agreed this is an accomplishment. Financial Affairs officer suggested cause of cost overruns is not always related to soil problems. Also that by law soil investigation is the responsibility of the contractor and should not be funded separately. Contracting officer stated that they have already approached five consulting firms and none have responded to the district's request for bids to date. Financial Officer warned that it is illegal to hire private consulting firms for a service for which a government consulting agency exists and that therefore he will not approve payments for soil tests. NUS coordinator informed him that from this year 3% of NUS projects' costs will be reserved for soil tests. Financial Officer remarked that so long as it is NUS and not GOE funding it should not therefore matter.

Accomplishment 6: NUS coordinators meet periodically to exchange ideas.

True NUS coordinators meet once a month with the governor. Also, meet monthly with zone deputy governor.

B. Problems

Problem 1: Low priorities given by authorities to informal areas.

Not a problem have since all NUS projects are in formal areas. When referenece was made by us to school X, participants indicated this was the only exception and water will soon be connected to this school.

A new Prime Ministerial decree tightening the ban on extending public utilities - water, electricity, sewage to informal areas. Now district cannot construct except on land offically assigned by the Governor. In past NUS projects, not much attention was paid to requiring this land assignment decree for project. Participants view this as an accomplishment.

Problem 2: Inadequate site analysis, e.g. extra excavations/ foundations, no water.

All agreed that this is not a problem any more, since new NUS procedure requires soil tests.

Problem 3: Lack of collaboration between district and service directors.

Nus coordinator did not see it as a problem while other participants did. One engineer gave as an illustration the case of school Y which was accepted by the district but not by the representative for the Ministry of Education. The school is currently being utilized.) The Financial affairs officer said we have to be realistic - there is no collaboration. The NUS coordinator questioned engineers on why this school problem was not brought to her attention earlier. Engineers and maintenance officer stated that have requested that representatives of WS, district and service department should all be present at acceptance of a project, but the WS engineer refused, claiming that his role is to advise/supervise and this is not his responsibility.

Financial affairs officer opposed this request on the grounds that (1) it will never work - there will always be conflicts. (2) On basis of whose decision will he approved payments to contractors? He, however, concluded that in matters where difference of opinions exists, he listens only to the district engineer.

Problem 4: Shortage of engineers in the district's buildings and construction unit.

All agreed but stated they had no solution to offer.

Problem 5: Imprecise and incomplete design and costing.

True: Solution suggested: employ consulting firms to design large projects. District to prepare designs only for small projects (e.g. a school for which model designs are pro-

vided by Ministry of Education, a vocational training center for which model designs exist, etc.)

Engineers admitted they prepare the construction designs only, and that they need specialized engineers to prepare the electrical networks and plumbing designs since they have no experience and do not know how to prepare these designs.

Problem 6: Loss of flexibility in managing contracts due to new law. (Law limits change orders to 5%.)

All agreed that it is so, only with respect to change orders that involve adding new items. The financial officer explained, you cannot add new items but you can change (increase/decrease) qualities of items within an already existing budget item line. The specifications are approximate and can be increased or decreased. (Example: cannot change oil paint to plastic or other type of paint but can add more quantities of same type of paint).

The engineers reported that the issue of the change order limit to 5% or 25% (as in previous law) was discussed in the WS training session but was not resolved.

Problem 7: Contractor default requires new bidding.

We all agree it is a problem and that it causes delays. Financial officer reported that this could require a new estimate as well as a new bid/contract. Engineer: problem can be solved by providing new funding for the subproject until penalty and difference in cost of project resulting from new bid is collected from old contractor.

NUS Coordinator: We know it is a problem but what is the solution?

Financial officer stated that the problem is with the district leadership. "We present documents requesting withdrawal of a contractor and no action is taken."

"If penalties are enforced just once, all will be fearful. If you severely punish one contractor, the rest will stay in line. But the leaders do not take decisive action."

Problem 8: Contractors not bidding on 1984/1985 NUS Sub-projects.

Not true. Tender invitations for 1984/1985 sub-projects have not yet been announced. However, all agreed that contractors did not respond to several bids to complete unfinished subprojects withdrawn from other contractors.

Problem 9: Transportation for engineers.

All agreed. Only one vehicle is available to serve the many units of the Housing Department (building and construction unit, private sector licensing unit, road and sidewalk repair unit, and stores licensing unit.)

Problem 10: Cost overruns.

The financial affairs officer and engineers say problem exists and will continue. He stated that once the funds have been allotted to the district, district chief should have full authority to control the funds. WS should not have the authority to switch funds once the annual allotment is made to the district. Also an additional amount should be set aside in the budget for cost-overruns.

The district chief has full control over all GOE funds, so why not over NUS funds. Moreover, how can anyone hold the district chief accountable if he is not responsible. If one has the authority, one can be held accountable.

Problem 11: Materials shortages, e.g. cement.

The issue is not that of shortages but rather that contractors have to wait for long periods in order to receive their allotted quotas of building materials (at subsidized prices). Contractors usually do not have the financial means to buy cement

from the black market. It was suggested as a solution that GOE projects should have (as in the past) priorities over the private sector projects in receiving quotas of subsidized cement from the government distribution centers.

Problem 12: Poor contractor performance (i.e. delays), Penalties for late work not enforced.

All agreed.

Problem 13: AID, W.S., district and service directorate engineers, give finance officer different instructions.

Financial officer stated their interference in the technical aspects affects the financial affairs. He gave as illustration the case of School Z where WS engineer gave instructions that contractor is not to be paid while the district engineer instructed that contractor be paid. Recommended that all issues go through the district engineer whose decision should be final.

Problem 14: No maintenance planning, budgeting and scheduling.

Maintenance officer was at first touchy and thought this was criticism directed at him. Once it was explained that reference was to NUS projects maintenance the air was cleared. It appears however, that none of the participants is aware of the need to prepare a maintenance plan.

Engineers suggested we include an additional problem: the problem with the official unit price list (they understand other districts use the ongoing market price and they inquired why the market price is not used by their district.)

C. PROPOSED SOLUTIONS

Solution 1: Special funding for cost overruns/change orders.

All agreed there is a need for a special emergency fund in order to minimize moving funds from project to project.

Solution 2: Participation of engineers in contractor ratings.

All agreed.

Solution 3: Special fund for engineers/technicians site visits.

Some participants asked why not buy a car. When it was explained that NUS funds cannot be used for the purchase of vehicles participants asked: What about renting a car? The NUS coordinator recommended that transportation should also be provided to the NUS coordinator so that she can make site visits.

Solution 4: More training for engineers in design and costing.

All agreed. Engineers expressed a special need for training in electricity/plumbing designing.

Engineers recommended the following as solutions to the shortage of engineers:

- Raise salaries
- Use governorate design office for project design
- Transfer engineers to district from other districts (particularly districts with excess engineers).

انتحارات

- ١ - تحسن ملحوظ فى ادارة المشروعات حالما بالمقارنة بالعامين السابقين
- ٢ - توزيع أسئله وأكتر فاعلة للاسمادات على المشروعات المختلفة
- ٣ - وضع شروط لاختيار المشروعات ولاختيار المقاولين
- ٤ - الالتزام باختيار المقاول الذى عدم أصل الشروط وأقل الأسعار سدا من الالتزام باختيار الأقل سعرا فقط
- ٥ - قبل البدء فى تقدير تكاليف المشروع يتم عمل حساب للتربة لتفادى زيادة التكلفة الفعلية عن الأعمادات المقررة
- ٦ - اجتماع منقى المشروعات المختلفة بصفة دورية لتبادل الأفكار والأراء

مشاكل لم تحل

- ١ - تحظى المناطق المخالفة بأدنى الاهتمام من جانب الجهات المسؤولة .
- ٢ - دراسة المواقع المقامة عليها المشروعات غير وافية (ينجم عن ذلك زيادة في عمليات الحفر والأساسات ، عدم توفر المياه) .
- ٣ - عدم وجود التعاون الكافي بين الحى وادارات الخدمات المخلفة بالحى .
- ٤ - سوء توزيع المهندسين ، مع وجود نقص واضح بين المهندسين فى حى حلوان (قطاع البناء والتشييد) .
- ٥ - عدم استكمال بالاضافة الى عدم مراعاة الدقة اللازمة فى تجميع المشروعات .
- ٦ - قانون المناقصات والمزايدات الجديد قيد حرية التصرف بالنسبة لاضافة اى اعمال الى نفس المقاول .
- ٧ - عدم وفاء المقاول بشروط التعاقد او تركه العمل دون انهاءه يقتضى اجراء مناقصة جديدة .
- ٨ - المقاولون لا يقبلون على مناقصات الحى لعام ١٩٨٤ / ١٩٨٥ .
- ٩ - مشكلة المواضلات بالنسبة للمهندسين .
- ١٠ - التكلفة الفعلية للمشروع تفوق الاعتماد والمخصص له .
- ١١ - نقص مواد البناء مثلا " الاسمنت" .
- ١٢ - تأخر المقاولون فى اتمام الأعمال المسندة اليهم ، وكذلك عدم تطبيق العقوبات المقررة فى هذا الشأن .
- ١٣ - التضارب فى التعليمات للإدارة المالية ومن المكتب الاستشارى ومن ممثلين المعرفة ومن مهندسى الحى .
- ١٤ - عدم وجود خطة للصيانة وعدم توافر الشروط اللازمة للصرف فى اعتماد الصيانة .
- ١٥ - كيف يتم تقدير التكلفة الأولية لاي مشروع ؟ من يقوم بهذا العملية؟ وفى اى مرحلة من مراحل المشروع يتم تقدير هذه التكلفة (قبل / بعد تحديد الاعتماد للمشروع) ؟ .

الحلول المقترحة

- ١ - تمويل خاص لتغطية الفروق بين الاعتمادات والتكلفة النهائية للمشروعات
- ٢ - اشراك مهندسي الحي في عملية تقييم المقاولين
- ٣ - تمويل خاص لتغطية مصاريف انتقال مهندسي الحي والفنيين الى مواقع العمل
- ٤ - تدريب مهندسي الحي على وضع تصميم وعلى تقدير التكلفة الأولية للمشروعات

Appendix B: Case Study

The Dynamics of TA in East District, Alexandria

Purpose To familiarize the reader with East District's resources and to show the relation of TA to the District in the implementation of NUS subprojects.

East District is one of the leading districts in the Alexandria Governorate since the district conception in 1970. It has proven itself capable of running a number of development efforts funded by the General Budget (Bab III), the Local Service Government Fund and the Industrial Area Fund with annual budgets ranging from L.E. 200,000 to 1,500,000.

According to the Wilbur Smith Project Manager, "a successful district always has a strong district chief". A strong District Chief can exert his influence vertically i.e. up through the Governate and the Ministries; and down through his staff. Because of his influence he receives the most qualified persons to fill his staffing needs. Such is the case with East District having a strong District Chief and a result having a capable Director of Financial Affairs, District Engineers and a NUS Coordinator. Most having governorate experience and being highly educated.

One can also note districts which have senior District Chiefs; typically districts inhabited by middle and upper class citizens who can exert influence on the Governorate.

Therefore it is not unusual for East District be the most successful district with the Neighborhood Urban Service Project in the Alexandria Governorate because of the following characteristics: strong District Chief; capable and experienced staff; enjoys good relations with the Governorate; and predominately inhabited by middle and upper class influential citizens.

East has been able to absorb and implement NUS funds at a fairly successful rate. All of the FY81/82 and FY82/83 projects have been

completed and the FY83/84 are well under way. The district has matured with implementation of NUS subprojects and capacity building has occurred with the guidance of the TA.

Project Selection

A example of the role TA played and the degree of impact they have had is reflected when reviewing the subproject selection process over the past three years. The TA found districts selecting inappropriate and misguided subprojects based on the Popular Council's influence during the first year of NUS. In light of their finding, the TA conducted a Governorate wide needs assessment. The TA consultant surveyed all services available to the public in all districts; once data was documented it was given to the district for use in subproject identification. Districts have found the Needs Assessment useful when selecting subprojects but as the East NUS Coordinator suggested "we could have done it ourselves if given the financial resources".

The District has not only used the needs assessment appropriately but has now more importantly involved selected beneficiaries of proposed subprojects in the planning dialogue. For example, when classrooms were to be added to a primary school the headmistress was asked to attend a planning meeting and recommend suggestions for the school's addition. East District's NUS Coordinator, Engineers, and the Director of Financial Affairs are pleased with the results from the community involvement in the planning dialogue.

East District frequently negotiated with WS over the past two years to assume more of the responsibility in the planning and implementation of NUS subprojects. Wilbur Smith has for the most part granted them full responsibility. According to the NUS Coordinator in East, Wilbur Smith first allocated a fixed amount of funds per subproject and then the district had to design the structure according to the funds assigned. In effect, WS controlled success or failure of subproject implementation in that it put the district under a fixed price constraint affecting design formulation, contract bidding, construction and maintenance. After negotiating with WS in 1983, East District assumed responsibility for first running feasibility studies and cost estimates in subproject identification and then submitting the proposed subproject to WS. The result of East District increasing

its capacity in determining subprojects and calculating cost estimates was positive, both in capacity building and in successful subproject implementation.

Project Implementaton

All subprojects in the first two years of NUS were small in terms of funding and fragemented. After numerous complaints from East District and other districts as well WS changed it's strategy to having fewer but larger subprojects. The change assumed East could effectly handle more costly and complicated subprojects both financially and technically. It also meant more TA involvement. After two years of TA assuming the major tasks of subproject implementation, East District began to identify subprojects that required increased amounts of funding and were more complicated in the nature of their design and construction. District Engineers were required to run soil and concrete tests because of their infamiliarity with larger size projects. The district was no longer rennovating a classroom but now was building additional storeys onto an existing school. Complications did arrise due to the engineers inability to draw designs and conduct soil tests, which district engineers were quite willing to admit. Three points can be deducted by the change:

- 1) District staff proved they could identify subprojects
and run feasibility studies and cost estimates more effectively than before with WS allocating a fixed amount of funds per project.
- 2) The district staff proved itself capable of implementing large complicated subprojects.
- 3) Although East District assumed responsibility in selecting large scale subprojects it also meant more TA involvement

because of the complex nature of large scale subproject construction. So while the District was growing more independent in one way it was becoming more dependent on TA for other more complex skills they lacked.

Engineers in East are the first to point out that they needed assistance from the TA contractor in drawing designs and in foundation analysis i.e. soil and concrete testing. The engineers feel they have gained a great deal from the TA engineer in the past and has gained the respect of the East Engineers for his knowledge and his experience with the Governorate. But one can suspect that the engineers have grown dependent on the TA engineer for his advice, contrary to the TA's objective of capacity building.

The views of the East Engineers and that of the TA Engineer differ. East engineers complained of the TA making site visits independent of them, therefore blocking any chance of "on the job training". This is a frequent occurrence because both are visiting sites more often due to the increase in subproject size. District engineers have responded to this in two ways: they feel they could learn more of the needed skills from the TA by accompanying him to the sites; and they feel the TA engineer inspects sites alone because he wants "to see how their money is being spent". When confronted with this issue the TA engineer reflected completely different issues. According to the TA engineer, when district engineers visit the site with him the contractors tend to cover up construction faults, therefore when he goes by himself he sees a more realistic picture. Furthermore he said he is now trying to wean district engineers from his services.

East Districts' qualified, experienced and influential staff are more secure and are more comfortable changing or modifying set rules, and thus they are more flexible in managing the district. For instance, the director of Financial Affairs has two degrees, one in law and the other in commerce and finance. Prior to working in the district he worked in the Financial Affairs Directorate in the governorate. He has taken the initiative to modify certain procedures.

1) All districts must use the 1974 GOE price list when costing subproject designs and implementation needs. Using this old price list has been responsible for much of the errors in cost estimates. He updated this list to match 1982 prices, providing a basis for more realistic cost estimates and better project management.

2) They modified a number of the financial forms by adding an additional column to mark savings in subprojects. According to the finance director, they can now keep track of excess funds and use this record to help make a case for transferring funds from one subproject to another.

3. East engineers now run feasibility studies on each proposed NUS subproject before submission to WS.

4) All those involved in NUS in the District office now meet weekly to discuss problems, share information, and coordinate activities. These weekly meetings have provided the staff a comprehensive means to coordinate their NUS activities.

The NUS Coordinator says, regarding planning and follow up, "WS played no role whatsoever in planning and follow up of NUS subprojects". The District's Planning and Follow Up Department did most of their work on NUS subprojects with out the assistance of WS. According to the NUS Coordinator the only difference between WS and the District is that "WS has engineers and if we had enough engineers we would use them in planning and follow up as well".

NUS increasingly dominated the District key staff use of time especially the District's engineers. In the first two years of the project one third of the engineers time was devoted to NUS. With the move to larger more complicated subprojects half of their time given to NUS. All but one engineer who refused to work on NUS, thought they had learned from the TA and were wanting more assistance in design and foundation analysis. This reflects the quality of TA.

All Departments in the District involved in NUS generally reported favorable comments about the role of WS. WS began their

technical assistance with an influx of procedures, instructions, rules and forms for each department involved to follow and eventually institutionalize. When the District proved capable soon after TA implementation, the district was left to function basically on its own. All except for the engineering department which was left with most of the day to day technical responsibilities, a department that needed specific skills and welcomed the chance to learn through the implementation of NUS. TA thus focused their energy on the Engineering Department.

Appendix C. SITE VISIT OBSERVATIONS

HELWAN DISTRICT Wilbur Smith District rating on FY 81/82
construction subprojects: 3.6 (maximum rating possible 10.0)

Helwan Public Hospital Outpatient Clinic,

Location: Helwan Public Hospital, Helwan Kism

Description: 1 story structure, 13 units.

Subproject 011101583

Background Information From WS Report of 8/14/84: "Initial allocation LE 80000, current allocation LE 99500, contract cost LE 79050, funds spent LE 76496. Date work started 5/10/83, scheduled completion date 10/03/84. Date District Inspection 7/30/84. District estimated 90 % work complete. Date WS insp. 7/30/84. WS est. 90 % complete. Remarks: "Current allocation was increased on 5/22/84 to introduce some finishing improvements. Slow progress." See below, Al Nasr Primary School for WS rating of contractor.

ISTI/SRC Visit 10/20/84: We found the structure in final, finish stage of construction.

Construction Details we observed:

1. Floors irregular.
2. Doors don't close.
3. Poor quality door hardware.
4. Plumbing work is shoddy; flush mechanism doesn't work.
5. Sewer connection plugged.

6. Site not cleaned up.

Al-Nasr Primary School,

Location: Ezbet Kamel Sedky, Helwan Kism

Description: 2 story structure, 10 classrooms

Subproject 01101283

Background Information From WS Report of 8/14/84: "Initial allocation LE75000, current allocation 60000, contract cost 54625, funds spent 15316. Date work started 5/20/83, scheduled completion date 5/05/83. Date District inspected 7/30/84. District estimated 30% work completed Date WS inspection 7/30/84. WS estimated 30% work completed. Remarks: "Columns for first floor completed. Slow progress." WS rated contractor, Salah Abdul Khaled, who is also the contractor for Helwan Outpatient Clinic: "Poor....recommended not to deal with him, works in Misr El Kadima under the name of Abdel Khalek Abdel Meguid, very bad implementation in Misr el Kadima & Maadi," in its evaluation of contractors, dated 8/23/84.

ISTI/SRC visit 10/20/84: School was still under construction; concrete shell was completed up to the second story. On the site we found the contractor.

Construction Details we observed:

1. Edge beams on whole west side of building wavy, up to 8-10" off center. Forms gave way during pouring of reinforced concrete.
2. Form for one edge beam broke. It was hand plastered over exposed steel.
3. One beam poured in two parts. Joint shows.

4. Rebars exposed in many places.
5. Many voids where concrete was not vibrated/worked in.
6. Pieces of form wood left in concrete to be plastered over.
7. Concrete mixed by hand?
8. Wiring exposed.
9. Oversize gravel protruding from columns and beams.

Comments: Due to the very badly executed reinforced concrete work this building has likely lost 20% to 25% of its design strength. From our interview with the contractor we got the clear impression that he doesn't understand how reinforced concrete gets its strength. The TA contractor has already flagged him as incompetent. In spite of his obvious weakness, two districts have already awarded him four previous NUS contracts. This is the only structure we observed where we felt there was a possible serious hazard, however, for more finished constructs it is impossible to know what faults lie hidden under the plaster and paint. The TA contractor is reviewing the safety of this building.

Ben El Ezbetein School

Location: Street 18, Helwan Kism

Description: 6 classrooms, two story building on raised columns

Subproject 011101182

Background Information From WS Report of 8/14/84: "Initial allocation LE 40000, current allocation 40000, contract cost 37310, funds spent 30689. Date work started 8/4/82, scheduled completion date 5/31/83. District inspected 5/31/83. District estimate 100% work completed. WS inspected 5/31/83. WS estimated 100% work completed. Remarks: "Contract amended from LE 30310" WS in its May 1984 Survey of FY81/82 Facilities commented: "Accumulated mineral water overflow needs sewer drain; doors and window frames need repair/replacement; needs removal

of contractor debris." Same report with respect to painting, finishing or repairs needed specifies: "(sic) "Fixing doors torn out frames, supporting lighting." WS rating of contractor (8/23/84): "Poor; technical efficiency: poor; not bound with the time schedule. It is recommended not to deal with him."

ISTI/SRC visit 10/27/84: This 82/83 NUS subproject adds to a school first built in 1960 and added to in 1979; we saw little difference in general appearance between the older buildings and the new.

Construction details we observed:

1. Basic structure looks okay.
2. Almost all the door frames are coming loose from walls.
3. Door and window hardware of poor quality.
4. Window panes broke (vandalism).
5. Ground floor classrooms cannot be used due to spring water seepage, which causes sewage overflow in school yard and blocks entrance to school.
6. No manhole covers on sewer.
7. Toilet flushers lack chain rods, and therefore flush levers are out of reach of students. Drain is plugged; when flushed, floor floods.
8. Ground floor tiling incomplete.

Comments: Sulphur springs on elevated ground south of school have already caused severe damage to ground floor of 1979 building. On the west side of the school is a pool of stagnant water, which has

necessitated the rebuilding of the wall on this side of the building. When building the 1979 building salt water cement was used, but it unfortunately was not used in the NUS subproject building. The new building, however, is designed up on piles so as to avoid the problem of flooding from the sulphur springs. The district engineer said that one attempt had been made to divert the spring water by digging trenches and putting in pipes, but the job was never reasons. She did not know why.

Though not complete, the NUS building was accepted last year by the District and has been in use since. The Education Department engineer, however, has not yet accepted the building.

(The NUS Evaluation District Case Study Report contains a detailed discussion of this subproject.)

Arab Kafr El Elw School

Location: Arab Kafr El Elw Area, Tebbin Kism

Description: Renovation and 2 story building, 4 classrooms

Subproject 01101082

Background From WS report of 8/14/84: "Initial allocation 30000, current allocation 30000, contract cost 39520, funds spent 29961. Date work started 6/20/82, scheduled completion date 9/1//82, actual completion date 5/31/83. District and WS inspected 5/31/83; Both certified 100% complete. Remarks: Contract amended from LE 36520." WS in its May 1984 Survey of FY81/82 Facilities commented: "Requires paving of street leading to school and water main connection," but made no mention of any painting, finishing or repairs needed. WS contractor evaluation (8/23/84): "Acceptable. Technical efficiency good; slow in implementation. He nearly did not perform any work in 82/83."

ISTI/SRC visit 10/21/84: This NUS subproject consists of four classrooms built on top of an existing two classroom building, which had been built with community development funds. It has been in use since December 1983.

Construction details we observed:

1. No water connection yet, but the trench has been dug and pipe has been delivered.
2. W.C.'s being used with water brought by school children from neighboring house. Are in very dirty condition because the flush tanks are not in use.
3. Piping from supply line not connected to flush tank.

Water supply system will have to be checked once it is connected to the supply.

4. Very large school yard enclosed by plastered wall approximately 2.5 meters high built with NUS funds. There are minor

cracks in several places along the wall, which are probably due to settling of the foundation. Not a serious problem at present, but needs to be watched. Lower part of wall next to W.C. appears affected by seepage from an unknown source.

5. Minor cracks in building wall.
6. Main school building, office and W.C. building, and the guard room exhibit fairly good finishing work. Some distortion of wall surfaces and edges, but none of a serious nature.
7. Roof tiled with mosaics.
8. The door frames are separating from the walls. Some repair

work has been done. It seems there is a problem in the method used to attach door frames to the wall, and unless this is corrected, the separation problem will continue.

9. Numerous minor defects or quality problems in door and window hardware, electrical wires and outlets, blackboards, broken steps, electric switches and light bulbs.

Comments: School staff would prefer the horizontal layout usually used in schools rather than the vertical one used in the NUS construction. The users also mentioned that the NUS subproject provided no space for teachers, files, storage of equipment, etc., and suggested that problems would have been avoided by giving consideration to the needs of the school, number of students, the curriculum and the type of equipment needed for activities such as home economics, vocational training and sports, as is done in the case of schools built by the Ministry of Education. Money could have been made available for such needs by using less expensive materials to build the high wall around the school. Since the school is operating on three shifts and has a waiting list, the users feel it was a good decision to build the school and start classes even without water supply. Children now bring drinking water in flasks to school.

(The NUS Evaluation District Case Study Report contains a detailed discussion of this subproject.)

Kafr El Elw Youth Center

Location: Kafr El Elw St., Tebbin Kism

Description: Renovation and Nursery Structure

Subproject 011101382

Background From WS report of 8/14/84: "Initial allocation 15000, current allocation 15000, contract cost 14071, funds spent 11331. Date work started 6/20/82, scheduled completion date 9/17/82, actual completion date 5/12/83. Date District inspected 5/17/83 - 100% complete. WS inspected 5/31/83 - 100% complete. Remarks: fair quality." WS in its May 1984 Survey of FY 81/82 Facilities commented: "Renovated room needs equipping" and "Repair of comode flusher" needed.

ISTI/SRC visit 10-21-84: The nursery is composed of three classrooms, an office, kitchen and two WCs.

Construction details we observed:

1. The finishing work on both buildings appears to be fairly good. There is some chipping of outside walls. The sidewalks in back are starting to fall apart because of poor compaction and fill of sub-floor.
2. W.C.s were working.
3. The kitchen is somewhat cluttered but operational. The deep freeze, though almost empty, is working.
4. The doors and windows seem to be better finished (especially for fit) than at other sites visited.
5. Some minor details left unfinished, e.g., electrical wire protruding from the wall.
6. The W. C. in the sewing center did not appear to be in use.

(The NUS Evaluation District Case Study Report contains a detailed discussion of this subproject.)

ALEXANDRIA SITE OBSERVATIONS

(were all made on 10/23/84)

EAST DISTRICT, Alexandria Wilbur Smith rated East District on FY
81/82 construction subprojects: 6.4

Hoda Sharaawi Girls School

Location: Stanley Street, Berkeley, El Ramleh Kism

Description: 2 story structure, 4 classrooms

Sub-project 023102/83

Background From WS report of 8/14/84: "Initial allocation 22000, current allocation 22000, contract cost 26263, funds spent 36851. Date work started 1/25/83, scheduled completion date 9/24/83, actual completion date 10/20/83. 100% complete and in use. Date WS inspection 12/15/83." WS evaluation of contractor, Zakaria Mehaseb, (Sep. 1984) "Good performance and organization."

ISTI/SRC Visit: NUS subproject is an addition to an existing school. It consists of four classrooms (two storeys) built over a columned porch.

Construction details we observed:

1. Window hardware rusting.
2. Door hinges worn/rusted, doesn't close easily.
3. Blackboard, built up with layer of smooth plaster and paint,
is scaling.
4. Walls and ceiling finish is very good.

5. Floors are fair to good.
6. Light fixtures are poor quality; those on ground floor porch all broken off because of wind.
7. Site not completely cleared by contractor.
8. Poor quality wooden doors and windows.

Student Hospital Clinic and Health Office

Location: Moh. Fariud St., Bulkeley, El Ramleh Kism

Description: 2 story structure

Subproject 023101383

Background From WS report of 8/14/84: "Initial allocation 50000, current allocation 50000, contract cost 43000, funds spent 56962. Date work started 2/19/83, scheduled completion date 10/18/83, actual completion date 12/09/83. Date WS inspection 1/15/84. "Completed and in use." WS evaluation of contractor, El Sayed Amer El Shahawy, (Sep. 1984): "Good performance and organization."

ISTI/SRC Visit: The first floor is used as a health center and out-patient clinic, put into service in January 1984. The second floor is a physical therapy clinic.

Construction details we observed:

1. Finish work very good.
2. Vinyl floors good to very good.
3. Painting and trim very good.
4. Gate valve leaking in W.C. W.C. not working

5. Aluminum window hardware appears to be better quality than at Hoda Sha'arawy School; they are painted also.

6. Men's W. C. used as storeroom; urinals and W.C.s not working.

Women's W.C., also used for storage, was locked and inaccessible to users.

7. Water, turned on when building was completed, reaches 2nd floor only when not being used below. No water most of the time.

8. P.T. room not large enough.

9. Roof sloped for good drainage.

10. Stair risers uneven in height.

Comments: Though the design was approved by the Ministry of Health, the director of the health center pointed out there is no waiting room for patients; currently the narrow hallway serves as a waiting room. He also said he would like the main entrance to the building to be a door instead of an open metal gate, through which mice and cats enter, garbage is thrown and dust from the street is blown.

WEST District, Alexandria Wilbur Smith rated West District 3.7 on FY 81/82 construction subprojects.

Skin Disease Clinic

Location: Ibn Toulon St., Mina El Basal Kism

Description: Renovation Project

Subproject 023300883.

Background From WS report of 8/14/84: "Initial allocation 60000, current allocation 82000, contract cost 53182, funds spent 30053. Date work started 7/23/83. Scheduled completion date 1/28/84. Date District inspection 2/21/84. District estimates 35% work complete. Remarks: "Bids will be opened on 8/04/84. WS rating of contractor (Sep. 1984): "Poor workmanship and delays due to lack of experience and skilled workers."

ISTI/SRC Visit: The facility is still unused as water connections are not complete. Seems that there has been a change of contractors.

Construction details we observed:

1. Plastering and painting looks good to very good.
2. Window sash and inside doors of fine quality aluminum..
3. Good quality hardware and fixtures.

Karmouz Youth Center Gym

Location: El Nasria St., Karmouz Kism

Description: 2 story structure, gym under an auditorium plus locker rooms, ping-pong room, and a roof garden

Subproject 023300683.

Background From WS report of 8/14/84: Initial allocation 40000, current allocation 75000, contract cost 130310, funds spent 70543. Date work started 7/28/83, scheduled completion date 5/28/84. Date District inspected 3/17/84; estimate 90% work complete. Date WS inspection 7/24/84; estimate 75% Remarks: GOE funds add. LE 33000 now spent, an add. of +30000 from new budget already recommended + 35000 NUS add. alloc. Work is proceeding in carpentry and internal plastering."

ISTI/SRC Visit: Construction in its final stages; plastering and tiling for WC and showers underway, and floor tiles being laid.

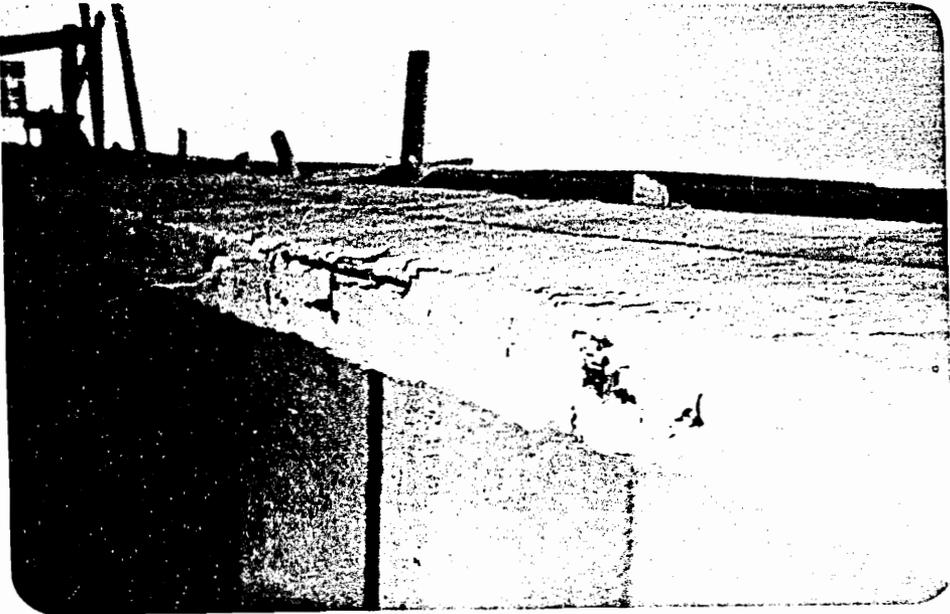
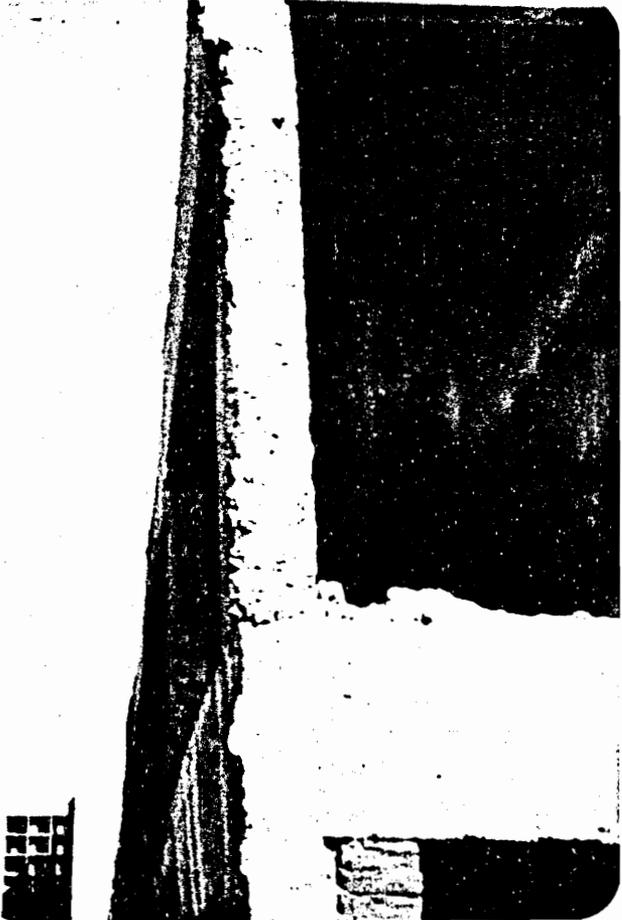
Construction details we observed:

1. What little concrete is exposed looks good.
2. Some brickwork is irregular.

Comments: We question the huge columns in the middle of the gym and theater, which limit the use of space. The Wilbur Smith engineer explained that the District engineer decided to use columns because his experience with contractors indicated that beams with longer spans may not be safe.

EXAMPLES OF STRUCTURAL DEFECTS THAT AFFECT THE SAFETY OF BUILDINGS

Corner Column Concrete of Very Poor Quality

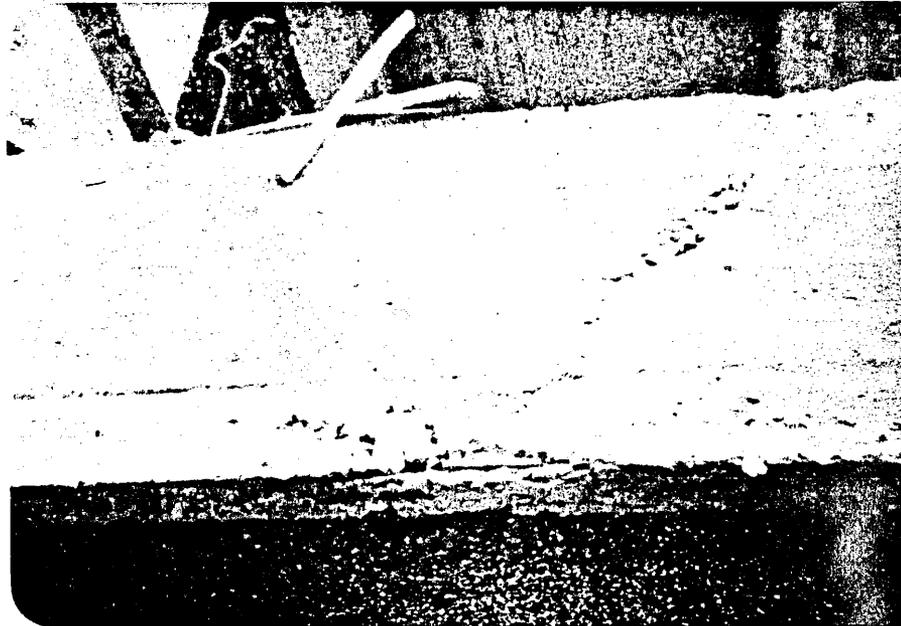


Exposed Re-Bars



Beam Wood Piece Left
in Concrete to be
Plastered Over

Joint in Middle of
Beam Due to Lunch
Break During Con-
crete Pour

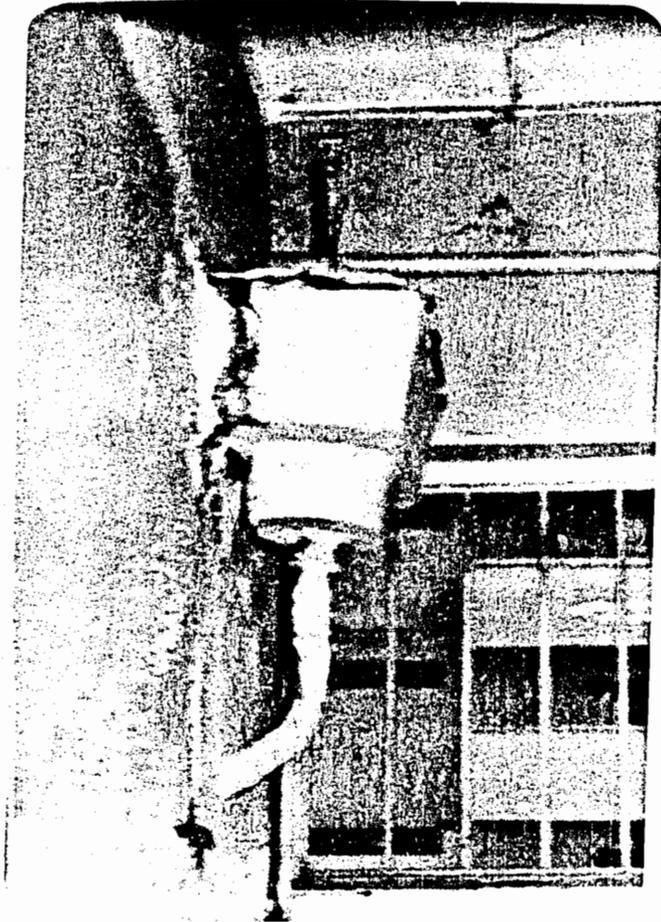


EXAMPLE OF POOR DESIGN



Wasted Space: Gymnasium with Columns
in the Middle

EXAMPLES OF COMMON PLUMBING PROBLEMS



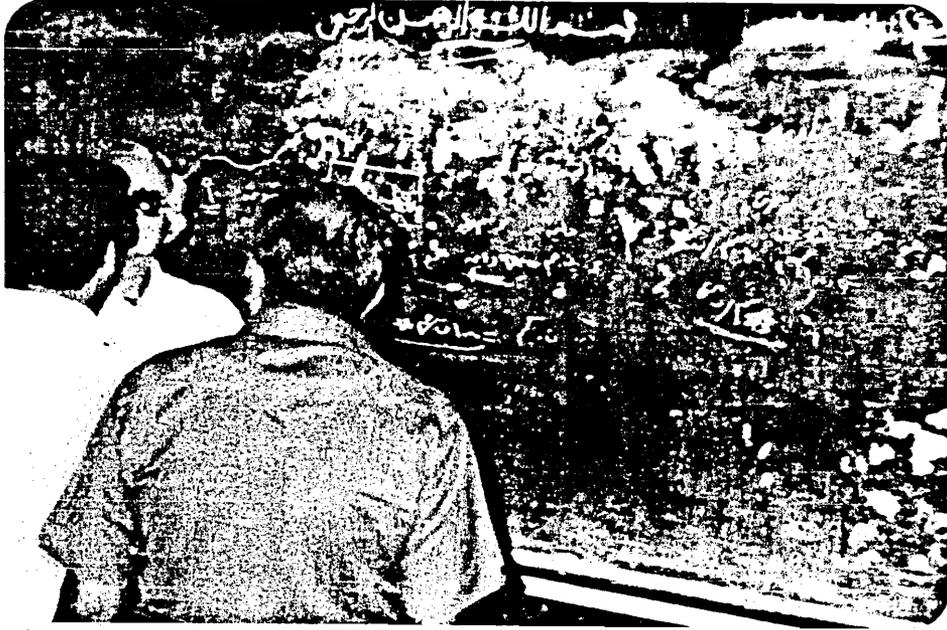
Flush Tank with no Pull
Chain (Not Functioning
and Leaking)

EXAMPLES OF SERIOUS MAINTENANCE PROBLEMS,
(BETTER CALLED REPAIR OF DEFECTIVE OR IN-
COMPLETE WORK), THAT EMERGE DURING THE
WARRANTY PERIOD

Door Frame Coming
Out of Wall



Walkway Starting
to Disintegrate



Blackboards Disintegrating



- 1) Poor Quality Workmanship and Hardware
- 2) Stucco Plaster falling off
- 3) Exposed Electrical Installations

EXAMPLES OF EXCELLENT FINISHING WORK THAT CAN BE DONE



Good Quality Workmanship and Hardware (Windows)

Good Quality Workmanship and Hardware (Walls, Windows and Floors)



Appendix D: Translations of Selected GOE Laws and Regulations

Law No. 9 for 1983

Answering the Organization of tenders (Bids) and Auctions

Selected Articles of Relevance to NUS

Article 1

Contracting for the purchase of movable goods (commodities), services, construction works and shipments shall be through advertized General Tenders (Muna'sa 'Ama).

As an exception to the forementioned and on the basis of a justified decision from the appropriate authority, contracting via one of the following methods may take place:

- a. Limited tender (Muna'sa Mahdouda).
- b. Local tender (Muna'sa Mahalia).
- c. Private bargaining (Mumarssa).
- d. Direct agreement (Ittifak Mubasher).

Article 3

Contracting via Limited Tenders shall be in cases whose nature require that participation be restricted to specific suppliers or contractors, whether in Egypt or abroad, provided their technical and financial efficiency has been verified and their good reputation has been established.

Article 4

Contracting via local tenders shall be limited to tenders whose value do not exceed LE.40.000 (forty thousand pounds). Participation

* An unofficial and approximate translation.

in local tenders shall be restricted to suppliers and contractors with whom the administrative department concerned decides to deal.

Article 5

Contracting via private bargaining (Mumarssa) shall be in the following cases:

1. Items whose manufacture or import is monopolized.
2. Items available only with one sole individual.
3. Items for which precise specifications cannot be specified.
4. Consultative or technical works, which by their nature, require the expertise of technical specialists or specific experts.
5.
6. Supplies, construction and transport works and services, identified as urgent,, or for which no bids have been submitted in response to invitations to bid, or for which bid prices submitted exceed the market prices and the department concerned's urgent needs does not allow for rebidding.

Article. 6

Private bargaining procedures shall be handled by a committee to be formed by a decision of the concerned authority. Committee membership shall include technical, financial, and legal elements, according to the significance and nature of the contract. A delegate of the Ministry of Finance shall participate in its membership whenever the contract value exceeds LE.20.000 and another from the Council of State whenever the value is in excess of LE.100,000

The concerned authority may authorize the committee to conclude a direct agreement if it has justifications for so doing.

Article 7

In urgent cases that cannot be constrained by tender procedures, and with the approval of the concerned authority, contracting may be concluded via 'direct agreement' within the limits of LE.20.000 for ordinary purchases, services and transport contracts and within the limits of LE.40.000 for construction contracts.....

Article 12

Decisions regarding all kinds of tenders shall be made by two committees - one committee shall undertake opening of the (bid) envelops and the other for deciding on the bids (reviewing the bids and making contract selection).

As for tenders whose value is less than LE.5,000 the opening of (bid) envelops and deciding on a bidder shall be via one sole committee.

Article 13

A decision shall be issued by the concerned authority to (appoint the members of the Opening of (bid) Envelops and the Decision Committee (bid selection committee). In selecting the members of these committees the nature and value of the contracts should be taken into consideration. The committees shall include technical, financial and legal representatives.

A delegate from the Ministry of Finance shall represent it on the Decision Committee, if the estimated value of the contract exceeds LE.50,000 (fifty thousand). Also, a member from the concerned Legal Opinion Department of the State Council shall participate in these committees whenever the value exceeds LE.30,000 (three hundred thousand)

.....

Article 14

A decision Committee may assign sub-committees to be formed from amongst its members to study the technical and financial aspects of the bids submitted and the extent to their conformity to the conditions announced. These sub-committees may also be assigned the task of ascertaining that the bidders qualify as the criteria of sound financial standing, technical capability and good reputation. The Decision Committee may include in the Membership of these sub-committees any experts whose opinion it sees fit to seek.

The sub-committees shall submit a report of its findings and recommendations to the Decision Committee. The Decision Committee may reject the recommendations of the sub-committees provided it gives justifications for so doing.

Article 15

Each administrative department shall keep registries (records) for registering the names of suppliers and contractors and complete data about each. Each department shall also keep a registry for listing the names of individuals with whom dealings are prohibited (who have been blacklisted) by virtue of legal provisions or administrative resolutions published by the Ministry of Finance. Dealing with those blacklisted is banned (forbidden).

Article 18

The tender shall be awarded to the bidder offering the best conditions and the lowest price.

Article 19

An initial deposit of one percent of the value of a bid for construction works and not less than 2% for others tenders shall be submitted with each tender.

Article 20

Within a period not exceeding ten days from the day following the date a winning bidder is officially notified by registered mail of winning the bid, the bidder for a construction contract must complete his provisional deposit to an amount equal to five percent of the bid price The final deposit shall be held as a guarantee for executing the contract.

Article 26

In case of contractor delays beyond the date specified in the contract for the execution of the work, the concerned authority - may for the sake of public interest - grant the contractor an additional period of time in which to fulfill the contract. As determined by the Executive Regulations and specified in the contract, a fine, not exceeding 15% of the contract value of construction contracts and 4% of supply contracts, shall be imposed for the period of delay.

The fine shall be imposed once a delay has occurred and without need to notify the contractor, warn him or take any other administrative or judicial action.

Imposing such a fine does not waive the administrative department's right to claim full compensation for any losses it incurred as a result of the contractor's delay in fulfilling his obligations.

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Article 27

The contract shall be annulled and the contractor's final deposit confiscated in the following cases:

1. If the contractor resorts to fraud or manipulation in dealing with the contracting agency.
2. If there is evidence that the contractor, personally or through a third party, has directly or indirectly, attempted to bribe any government personnel by the provisions of this law.
3. If the contractor becomes bankrupt or financially insolvent.

Names of contractors to whom either case 1 or 2 above apply shall be crossed from the registries of suppliers and contractors held by the concerned party. The Ministry of Finance shall also be notified thereof to publish the decision taken to blacklist a contractor in its administrative circulars. The annulment of a contract and confiscations of a deposit of a contractor by an administrative agency does not forfeit that agency's right to claim from the contractor compensations for damages incurred.

Article 28

If the contractor violates any of the contract's terms and conditions, the contracting agency shall have the right to cancel (annul) the contract or execute it at the contractor's expense.

Article 29

If a contract is annulled or implemented at a contractor's expense, the contracting agency shall have the right to confiscate the contractor's final deposit, and also to collect all fines for which it is entitled out of any funds that it or any other administrative agency owes the contractor, without need to take any judicial action.

EXPERTS FROM
THE EXECUTIVE REGULATIONS*
FOR LAW No. 9 for 1983
ORGANIZING TENDERS AND AUCTIONS **

Part II. Execution Procedures

Article 29

In reviewing the bids the committee concerned shall be guided by the prices used in its most recent dealings (contracts).

These prices along with the dates of these dealing shall be listed on the form specially designed for tabulating the data obtained from the tenders submitted. The committee shall also be guided by the current market prices, which the purchasing department is responsible to acquire.

* Decree No. 157/1983

** An unofficial and approximate translation.

Part IV. Contract Execution Procedures

CHAPTER I. Procedures Regarding the Execution of Construction Contracts.

Article 81.

The contractor shall have the works contracted for complete temporary (initial) turn-over to the contracting agency by the date specified in the contract.

If the contractor does not complete the work contracted for on time, the department concerned may accord him extra time to complete the work - if so required public interest - provided he is fined for the period of delay starting from the date scheduled for completion of work until the date of temporary turn-over.

Periods for which work was suspended due to circumstances beyond a contractor's control (force majeure), shall be discounted in calculating dealy periods. The basis for imposing the fines shall be as follows:

- (A fine of) one percent for the first week of delay or any part therefore.
- (A fine of) 1½ percent for the second week of delay or any part thereof.
- (A fine of) two percent for the third week of delay or any part thereof.
- (A fine of) two and a half percent for the fourth week of delay or any part thereof.
- (A fine of) four percent for any month or part of a month thereafter.

The fine shall be calculated on the basis of the final full value of the work contracted for, if the concerned administration judges that the part of the dealy and work orevents it, directly or indirectly, from fully benefitting from(the complete utilization of) the parts of the work executed

at the dates specified in the contract. If, however, the administration judges that the delayed parts of the work in no way affect its utilization, then the fine specified above shall be restricted only to the value of that portion of the works that is delayed.

The fine shall be imposed immediately whenever there is a delay, without any need for notices or warnings, even if no damages result from the delay.

The concerned administration should strictly adhere to applying the fines for delayed works and to deducting these fines from funds due to the contractor before authorizing payments to him.

Article 82

If the contractor breaks any of the contract terms, or is negligent or fails to fulfill any of his specified obligations and refrains from correcting the effects thereof within 15 days of his being notified by registered mail to do so, the Central Administration or the director of the concerned department has the authority to apply one of the following two measures:

1. Terminate the contract and confiscate the final deposit still owed the contractor at the time of contract termination. Also, acquire (collect) whatever fines or compensations due to the administration for the damage it suffered.

2. Withdraw the work from the contractor, and execute the works that have not been accomplished by a general tender, limited tender, local tender or private bargaining - at the expense of the contractor. Meanwhile, confiscating the final deposit due to the contractor, collecting all fines and compensations due to the administration and recovering all expenses or losses it incurred in excess of the contract value as a result of with-

drawing the works from the contractor.

The concerned department has the right to retain all or part of the temporary erections, buildings, tools and equipments, materials, etc. found at the work site, without in any way being responsible to the contractor or anyone else for any damages, or losses that may occur to them from whatever cause, and without paying any rent for them. It also shall have the right to retain the same even after the work is completed as a guarantee for its rights, and shall be entitled to sell them without bearing any responsibility as regards such sale.

Article 83

The contractor shall be reimbursed payments on account according to the progress of work as follows:

1. 80% of the decided value of the works already completed in accordance with the terms and specifications, according to the rates stated in the table (schedule).

2. 60% of the value of the materials supplied by the contractor for the purpose of using it to complete the works and that are actually needed- provided they conform to the specifications and are approved, and are stored at the work sites and proven to be in good condition at inventory inspection time.

3. After the provisional (temporary) hand-over (acceptance of the work) the concerned administration shall prepare the final lists of the value of all the works actually completed. Immediately thereafter payment will be made to the contractor of any funds still due to him, after deducting any down payments he had received or any amounts owed by him.

MAINTENANCE/REPAIR COST ESTIMATE

INSTRUCTIONS

1. District: Enter the district in which sub-project is located.
2. Project Title: Enter the official title of the sub-project.
3. Project Number: Enter the sub-project number assigned by NUS.
4. Date: Enter the date of the inspection on which the estimate is based.
5. Need: Place a check mark(x) by those items in need of maintenance, repair or replacement.
6. Description: Enter the location, extent of work and estimated quantities. Attach extra sheet if required to completely define the location, extent of work, specification or estimated quantities.
7. Estimated Cost: Based on description and quantities compute an estimated cost for the work and enter it in this column.
8. Funds Distributed:
 - Amount: Enter the amount of funds allocated for the particular item of work.
 - Date: Enter the date the funds were allocated for the particular item of work.
9. Improvement Achieved: Note if the work was completed as the need was described or if work accomplished was more or less than that needed and described.
10. Remarks: Make any remark appropriate for the work item. Attach extra sheet as necessary.
11. Signature: The person making the inspection and preparing the form will sign the form.

MAINTENANCE/REPAIR COST ESTIMATE

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District _____ Project Title _____ Project Number _____ Date _____

TYPE OF WORK	NEED	DESCRIPTION	ESTIMATED COST	FUNDS DISTRIBUTED		IMPROVEMENT ACHIEVED	REMARKS
				AMOUNT	DATE		
CLEAN-UP							
Building Area							
SIDEWALKS							
Project Site							
District							
PAVING							
Project Site							
District							
POTABLE WATER							
Distribution							
Connection							
SEWERAGE SYSTEM							
STREET LIGHTING							
Wiring							
Lamps							
WATER DRAINAGE							
SITE FILLING							
PLUMBING							
House Sewer							
Water Taps							
Fixtures							
BUILDING							
Window Glass							
Painting							
Plastering							
Tiling							
Carpentry							
Concrete							
Roofing							
ELECTRICAL							
Connection							
Repairs							
Lighting							
Transformers							
EQUIPMENT							
Installation							
Repair							
Replace							
Redistribute							
choi							