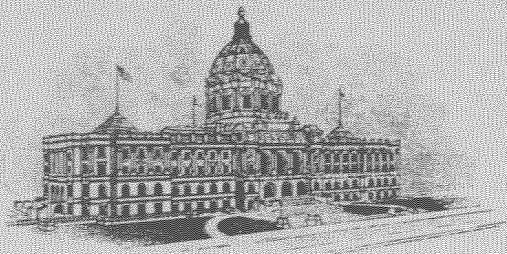


Final Report

EVALUATION OF THE
CONSTRUCTION COST OVERRUN
AT THE MINNESOTA
CORRECTIONAL FACILITY -
OAK PARK HEIGHTS

PROGRAM EVALUATION DIVISION
Office of the Legislative Auditor
State of Minnesota



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OFFICE OF THE LEGISLATIVE AUDITOR
STATE OF MINNESOTA

April 30, 1981

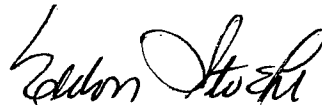
PREFACE

At the direction of the Legislative Audit Commission, the Program Evaluation Division, Office of the Legislative Auditor, conducted a study of the State Architect's Office (now known as the Division of State Building Construction) within the Department of Administration. In part, the legislative interest resulted from the disclosure in 1979 of a \$12 million cost overrun in the construction of the new high security prison at Oak Park Heights, Minnesota. Therefore, as part of our study of the Division of State Building Construction, we conducted an intensive review of the division's administration of that project.

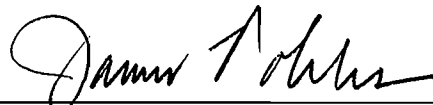
This report presents our findings and conclusions on the factors which led to the large cost overrun. In addition, the report presents recommendations for legislative and departmental action. The recommendations, if implemented, would strengthen the state's controls over building projects and lessen the probability that cost overruns of this magnitude would occur on future building projects. An analysis of other large state building projects will be contained in our forthcoming report on the Division of State Building Construction.

We wish to thank the Department of Administration, the Division of State Building Construction, and the Department of Corrections for their cooperation during this study. We also wish to acknowledge the assistance of the private architectural and construction management firms which were involved in the design and construction of the new prison.

This study was directed by John Yunker of the Program Evaluation Division staff. Thomas Walstrom conducted the research for the study.



Eldon Stoehr, Legislative Auditor



James Nobles, Deputy Legislative
Auditor for Program Evaluation

April 30, 1981

PROGRAM EVALUATION DIVISION

The Program Evaluation Division was established in 1975 to conduct studies at the direction of the Legislative Audit Commission (LAC). The division's general responsibility, as set forth in statute, is to determine the degree to which activities and programs entered into or funded by the state are accomplishing their goals and objectives and utilizing resources efficiently. A list of the division's studies appears at the end of this report.

Since 1979, the findings, conclusions, and recommendations in Program Evaluation Division reports are solely the product of the division's staff and not necessarily the position of the LAC. Upon completion, reports are sent to the LAC for review and are distributed to other interested legislators and legislative staff.

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EXECUTIVE SUMMARY

In 1977, the executive branch estimated that it would cost \$21.6 million to plan, construct, and equip a new 400-bed high security prison. Two years later, after construction had begun, the Department of Administration (DOA) and the Department of Corrections (DOC) requested an additional \$12.0 million from the Legislature to complete the prison.

As part of a study of state building construction, the Program Evaluation Division conducted an intensive review of the \$12 million cost overrun. Our review focused on four questions:

1. What factors caused costs to increase over the amounts requested from the 1976 and 1977 Legislatures?
2. Did DOA and DOC report the increased costs to the Legislature in a timely manner?
3. What efforts did DOA and DOC make to control project costs?
4. What actions should the state take to strengthen controls over building projects and lessen the chance that such cost overruns could occur on future projects?

A. FINDINGS

The \$12 million cost overrun is accounted for by the following factors:

- Planning on the project was delayed for approximately 15 months at a cost of \$3.3 million;
- The consultant architects' original estimates of cost and square footage were inaccurate, resulting in additional costs of about \$2.7 million;
- The Department of Corrections added space to the original program at a cost of about \$2.5 million;
- Compliance with Minnesota Department of Health and State Building Code requirements added \$0.9 million to costs;
- About \$0.9 million for construction management services was omitted from the original budget;
- An unanticipated increase in the inflation rate added \$0.8 million to costs;

- Additional architectural fees and services account for \$0.4 million;
- A heat reclaim system and an energy management system added \$0.4 million; and
- An unanticipated increase in miscellaneous non-building expenses added about \$0.1 million.

Although these factors explain the components of the cost increase, they do not themselves explain why the cost overrun occurred. We conclude that many of the problems experienced on this project were due to three weaknesses in the executive branch's control over building projects:

1. The lack of guidelines for determining when planning for a building project has sufficiently developed to permit a state agency to request construction funding from the Legislature, and the lack of procedures to ensure sufficient review of the cost estimate presented to the Legislature;
2. The lack of procedures to ensure that increases in project scope or cost, or plans to begin construction work, are reported to the Legislature in a timely manner; and
3. The lack of adequate policies and procedures in the Division of State Building Construction (DSBC) for dealing with potential cost overruns and for reviewing user agency requests to add to a project's scope.

These weaknesses and their effects on the prison project are discussed below.

1. THE APPROPRIATION REQUEST

The 1977 request for construction funds was based on a very preliminary stage of architectural design. Considerable uncertainty existed about many aspects of the proposed facility at the time funds were requested. In fact, in reviewing the estimates of size and cost prepared before and during the 1977 legislative session, we found that:

- The original estimate of square footage was outdated before it was presented to the Legislature.
- Estimated project costs were never really within budget after December 1976.
- The last cost estimate provided to the Legislature prior to approval of the appropriation request was not an accurate estimate of project costs.

Despite the uncertainties and the indications that the appropriation request might be inadequate, neither department cautioned the Legislature about the tentative nature of the original cost and square footage estimates.

DOC planners assert that DOC always presented the Legislature with the most accurate and current information given to them by the consultants and that the primary designer assured them that the project could be completed within the appropriation request. In our opinion, the problems with the presentation of cost estimates to the 1977 Legislature could have been avoided if DSBC staff architects had been involved in critiquing their consultants' estimates before presentation to the Legislature by DOC.

If the departments had informed the Legislature about the increase in estimated cost and size during the 1977 legislative session, two alternative outcomes would have been possible: either (1) the Legislature would have deferred consideration of funding for construction until the 1978 legislative session, or (2) the 1977 Legislature would have appropriated more than the \$20.8 million initially requested. Since the prison was needed, some legislators and staff believe the 1977 Legislature would have increased funding for the prison if DOC and DOA had indicated that more detailed cost estimates exceeded the original estimate.

In any case, we believe the outcome would have been beneficial. As much as \$2 to \$3 million might have been saved by reducing delays if the appropriation request had been deferred until 1978. Similarly, if more than \$20.8 million had been appropriated in 1977, the departments might have been able to proceed with fewer delays and to complete the prison for less than \$33.6 million.

2. LACK OF REPORTING TO THE LEGISLATURE

A second major factor which enabled the cost overrun to occur was the lack of reporting by the executive branch to the Legislature. Except for a few instances, the Department of Administration and the Department of Corrections did not inform the Legislature of the growth in project cost and size. In particular, we found that:

- Between June 1977 and February 1979, DOA and DOC did not keep the Legislature fully informed about increases in the size and cost of the project.
- Cost figures provided to certain legislators in January 1978 and late August 1978 underestimated the size of the overrun by at least \$1.5 million.
- Although the 1977 Legislature was not informed that construction would be "fast-tracked," DOA permitted partial construction of the facility without legislative review or approval of the increases in project cost and size.

By the time the Legislature was informed about the full extent of the cost overrun, the executive branch had already committed the state to \$6.3 million of construction work and at least \$2.0 million in other expenses. Furthermore, by that time, it was quite unlikely that the project could be completed within budget without wasting some of the work under contract. In our opinion, some of the additional costs--particularly those due to project delays--might have been avoided if the Legislature had been informed about increases in project costs and size in a timely and accurate manner.

3. DSBC PROJECT MANAGEMENT

A third factor which contributed to cost problems involved the manner in which DSBC has managed building projects. DOA has a general statutory responsibility to see that projects are completed within appropriated funds. However, DSBC's general policy concerning user agency requests for additional space and its procedures for implementing its statutory responsibility severely constrain the executive branch's ability to complete projects within budget.

DSBC's policy and procedures affected the prison cost overrun in the following ways:

- DSBC permitted DOC to add space to the facility even though the project already had budget problems.
- Because DSBC intervened only at the end of design stages when cost estimates were prepared, it took longer to complete design work than was originally planned. The project increased substantially in cost because of these time delays.
- DSBC permitted DOC to ultimately determine the scope, and thus the cost, of the project. DSBC did not inform the Legislature in a timely manner about options that would reduce total project costs.

Although the prison project was the largest building project ever managed by DSBC and although DSBC was working with a client (DOC) that had more resources to devote to the project on a day-to-day basis than did DSBC, we conclude that DSBC could have better managed the project within its resources and could have prevented a portion of the cost overrun. DSBC's policy of supporting the user agencies' programming decisions and its practice of reviewing a project's cost only when cost estimates are prepared at the end of a design stage are responsible for a portion of the cost increase. In particular, some of the additional costs due to delays could have been avoided through more effective project management. In addition, between \$0.7 and \$1.4 million could have been saved if DSBC had limited the amount of industry space which DOC added to its original program contained in the Master Plan. Although the additional space was once cut from the plans, DOA supported DOC's decision to add the space back in late 1978. In 1979, both departments reported to the Legislature that cutting the project's scope would not provide a "viable" facility.

B. RECOMMENDATIONS

We recommend that a number of statutory changes and a number of changes in DSBC policies and procedures be made in order to minimize the chance that cost overruns could occur on future building projects. To ensure that cost estimates used in appropriation requests are sufficiently accurate, we recommend that:

- The executive branch should not request construction funds for large, complex, or unique projects until architectural plans have progressed through design development or working drawings.
- The Legislature should make the Department of Administration specifically responsible for reviewing cost estimates prior to the presentation of appropriation requests by state agencies under its supervision.

We suggest that these recommendations be applied to projects with estimated construction costs in excess of \$1 million.

In order to ensure that the Legislature is informed about increases in project size or scope and potential cost overruns, we recommend that:

- The Legislature should revise Minnesota Statutes to require the Department of Administration to report to the Legislature at any time at which the department knows or has reason to believe that estimated project costs will exceed the funds appropriated. DOA should also be required to report any significant changes in project size or scope which its consultant architects are directed to make to the plans which were submitted to the Legislature during appropriation hearings or during the currently required review of schematic plans.

We suggest that this recommendation be applied to all building projects which are supervised and controlled by DOA and which exceed \$400,000 in estimated construction costs. A similar requirement should be applied to projects for which only planning funds have been appropriated.

We also recommend that:

- In addition to reporting the potential overrun, DSBC should advise the Legislature and the Governor of the alternatives available for keeping the cost within appropriated funds. The user agency should be required to justify in writing its reasons for any proposed enlargements of project scope.
- The Legislature should prohibit the Department of Administration from using "fast-track" construction, unless authorized for a specific project in an appropriation bill.

Since the prison cost overrun occurred, personnel changes have been made in the top management of DOA and in the management of DSBC. We recommend that the new department and division management make a number of changes in policies and procedures. These changes will enable DOA and DSBC to better control building project costs. In particular, we recommend that:

- DSBC should require each user agency to submit a written request to DSBC if the agency wants the consultant architect to make major design changes after schematic drawings have been completed and approved.
- DSBC should revise its contract for architectural design services to require consultants to have written approval from DSBC before making any changes which revise an approved plan or which will likely increase the construction cost above the approved construction budget.
- If a user agency requests a change which will likely increase costs above the budget, DSBC should require the user agency and architects to reduce other components of the project in order to stay within budget.
- DSBC should revise its contract for design services to require its consultants to reduce project costs to within budget without cutting essential items which must later be funded. If DSBC and DOA determine that it is cost effective to bid a project without certain essential items and to add these items later, DOA should inform the Legislature about the need for a future appropriation prior to taking bids.
- When a project is over budget, DSBC should instruct its consultants on when additional funds will become available and thus when it is likely that construction work will be bid. DSBC should also review the consultants' estimates to ensure that the proper assumptions about bid dates are used in estimating project costs.
- DSBC should, in general, verify the major assumptions used by its consultants to develop a cost estimate. If the estimate indicates the project is over budget and it is then reported to the Legislature, DSBC should also report any subsequent changes in project size or scope which affect the estimate.
- DSBC should establish a policy for its staff architects to follow in determining the amount of contingency to set aside for change orders.
- If construction management is used on any future project, DSBC should include the estimated cost of construction management in project cost estimates.

INTRODUCTION

In 1976 and 1977, the Minnesota Legislature appropriated \$21,600,000 to the Department of Administration to plan, construct, and equip a new high security prison. Since 1977, costs for the prison have risen to approximately \$33,600,000. As part of our evaluation of state building construction, we examined the prison cost overrun in detail. This report attempts to answer the following questions:

1. What factors caused costs to increase over the amounts requested from the 1976 and 1977 Legislatures?
2. Did the Department of Administration and the Department of Corrections report the increased costs to the Legislature in a timely and accurate manner?
3. What efforts did the Department of Administration and the Department of Corrections make to control project costs?
4. What actions should the state take to strengthen controls over building projects and lessen the chance that such cost overruns could occur on future projects?

To answer these questions, we interviewed past and current officials in the Department of Administration (DOA) and the Department of Corrections (DOC). We also interviewed representatives of the various private firms that conducted most of the planning and cost estimating for the project. Altogether, we conducted more than 35 interviews and reviewed thousands of pages of meeting minutes, correspondence, cost estimates, and planning files supplied by DOA, DOC, and private firms.

This report presents in detail our findings, conclusions, and recommendations. Chapter I presents a brief history of the project and its funding. Chapter II identifies those factors such as added space and time delays which account for the \$12 million increase in costs. Chapter III identifies basic weaknesses in the executive branch's review of appropriation requests, reporting to the Legislature, and management of project costs and explains how these weaknesses contributed to the cost overrun. Chapter III also recommends legislative and administrative changes to correct these weaknesses.

I. HISTORY OF FUNDING

A. CORRECTIONAL SYSTEM PLANNING: 1975

During the early 1970s, corrections officials, legislators, and others discussed the need to reduce overcrowding and improve conditions at the Minnesota State Prison in Stillwater. In 1975, the Legislature appropriated \$335,000 to the Department of Corrections (DOC). From these funds, a Task Force on Correctional Institutions was established to recommend to the 1976 Legislature the following:

- a. The placement of inmates in the Minnesota Security Hospital who are under the exclusive control of the Commissioner of Corrections.
- b. An action plan to assure reducing the prison population to a maximum of 350 and where the excess population will be located.
- c. The necessary construction and demolition to accomplish a maximum population of 350 in the state prison.
- d. The future of the industry programs.¹

In February 1976, the task force reported its findings to the Legislature.² One of its principal recommendations was to build a new 400-bed prison adjacent to the Minnesota State Prison at Stillwater. The proposed facility would house 250 maximum security and 150 medium security inmates and would cost approximately \$50,000 per inmate, or a total of \$20,000,000.³ The task force also recommended demolition of the existing Minnesota State Prison, with the exception of 70 minimum security beds, upon completion of the new

¹Minn. Laws (1975), ch. 434, §3, subd. 1(d), made \$35,000 available to finance the preparation of the task force's reports to the 1976 Legislature. The remaining \$300,000 was to be expended on preparing preliminary architectural plans, a report on prison population changes, and a master plan for the 1977-79 biennium. These items were to be presented to the 1977 Legislature.

²Report to the Minnesota Legislature, Minnesota Task Force on Correctional Institutions, Minnesota Department of Corrections, February 16, 1976.

³In addition to the \$20,000,000 cost, the task force estimated that another \$3,687,700 would be needed if the farm machinery industry were transferred from the Stillwater prison. The task force also noted that additional funds would be required if a new power plant were needed for the proposed facility. Since the farm machinery industry was not transferred and a new power plant was not necessary, these additional costs do not appear in later cost estimates.

facility. Based on the task force's report, the 1976 Legislature appropriated \$800,000 to the Department of Administration (DOA) to develop preliminary plans and detailed architectural plans and drawings for the proposed new facility.

B. PLANNING THE NEW PRISON: 1976

By law the Commissioner of Administration is responsible for the development of state building construction plans. This is accomplished through the State Architect's Office (now known as the Division of State Building Construction) within DOA. On most large projects, DOA uses private architectural and engineering consultants to develop the plans rather than department employees. On projects exceeding \$400,000 in estimated construction costs, the State Designer Selection Board selects the primary designer for the Commissioner of Administration.

In August 1976, the board selected a team of architectural and engineering consultants to design the new prison. The team included three firms: (1) a local architectural firm, (2) an out-of-state architectural firm with experience in designing correctional facilities, and (3) an engineering firm.² After the selection, the Minnesota architectural firm, as the manager for the design team, signed a contract to provide design services to³ the state, under the supervision of the Department of Administration.

Concurrent with the selection of design consultants, DOC began to develop a statement of program requirements for the facility. These program requirements were developed by 16 task forces consisting of approximately 70 department employees. DOC planning efforts were supervised by a project director appointed by the Commissioner of Corrections. DOC was assisted by another consultant architect selected by DOA to act as a liaison between DOA and DOC, and by an advisory committee comprised of national correctional experts and several state legislators. The advisory committee was

¹Minn. Laws (1976), ch. 347, §8, subd. 3.

²The out-of-state architectural firm was primarily responsible for the early design work (including the initial space study, schematic design, and design development). The local architectural firm was responsible for managing the design team's efforts, preparing construction drawings, and administering the project during construction. The engineering firm was primarily responsible for the detailed design of the electrical, mechanical, and structural features of the prison.

³See the Appendix for a list of project participants, including those from DOA and DOC.

selected by the Commissioner of Corrections. The program requirements developed by DOC were then used by the architectural design team as a basis for developing preliminary plans.

During the summer of 1976, DOC also established \$20,000,000 as the construction cost figure to be used by the consultants in designing the facility. In addition, DOA set \$20,000,000 as the maximum construction cost in its contract with the local architectural firm. According to the contract, the consultants were to stop work and immediately notify the Commissioner of Administration in writing if they found that the construction cost would exceed \$20,000,000.

Working closely with DOC planners, the architectural design team completed development of the space requirements and the conceptual design of the facility by approximately December 10, 1976. The space requirements and design were reviewed by DOC and its advisory committee, incorporated into DOC's Master Plan for a High Security Facility, and then used as a basis for requesting construction funds from the 1977 Legislature.

C. THE REQUEST FOR CONSTRUCTION FUNDS: 1977

On February 8, 1977, the Department of Corrections and the Department of Administration presented a request for \$20,800,000 to a joint meeting of the Senate Finance's Health, Welfare, and Corrections Subcommittee and the House Appropriations' Health, Welfare, and Corrections Division. The request was contained in the Master Plan presented by DOC. The request included approximately \$20.1 million for construction work, including sitework, fixed equipment, and built-in furnishings, and \$0.7 million for non-building expenses such as additional architectural fees and miscellaneous expenses. When combined with the previous appropriation of \$0.8 million for design services, the total cost of constructing the facility was estimated to be \$21.6 million, including \$20.1 million for construction and \$1.5 million for non-building expenses.

DOC also informed the 1977 Legislature that an additional \$2,400,000 would be requested during a subsequent session to purchase furnishings for the prison and equipment for the prison industries. With that later request, total funding for the prison would have been \$24,000,000.

¹The estimate of construction costs was provided by the out-of-state architectural firm. Subsequent cost estimates were prepared by two firms--one working for the design team and one working for DOA. The design team's cost estimator prepared his first estimate in February 1977. A local construction management firm hired by DOA to estimate costs and supervise the construction work prepared its first estimate in April 1977.

In May 1977, building appropriation bills containing funding for the new prison reached the floors of both the Minnesota Senate and the House of Representatives. Attempts to delete funding for the new prison were defeated in both the Senate and the House. On May 21, 1977, both the Senate and the House passed a conference committee bill containing the requested \$20,800,000. The bill was approved by the Governor and became effective on June 8, 1977.

D. THE REQUESTS FOR ADDITIONAL FUNDS: 1979 AND 1981

In 1979, however, DOC and DOA asked the Legislature for an additional \$10.2 million to complete the construction of the prison. In its 1979-81 biennial budget request, DOC also asked for \$4.3 million for equipment and furnishings, \$2.3 million for staff and related costs, and \$0.3 million for supplies. Included in the amount requested for equipment was approximately \$1.3 million for built-in equipment and \$0.5 million for construction work, which were originally to be financed from the 1977 appropriation. In total, the departments requested an additional \$12.0 million to complete the work that was estimated in 1977 to cost only \$21.6 million.

The decision of the 1979 Legislature was complicated by the fact that DOA had already begun construction of the new prison. In addition to planning costs, DOA had approximately \$6.3 million in construction work under contract. DOA and DOC also reported that, in their opinion, any budget reductions made would leave the state without a viable facility. Faced with these facts and recommendations, the 1979 Legislature appropriated \$10,200,000 for construction plus a \$3,000,000 contingency fund.

It was expected that some additional funds would be needed to purchase the remainder of the prison furnishings and equipment. As a result, DOC is requesting that the 1981 Legislature appropriate \$1,418,256 for the remaining equipment and furnishings.² If appropriated, this latest request will bring the total appropriations to design, construct, equip, and furnish the new prison to over \$36.1 million. Total project costs, including movable furnishings and equipment, will exceed the original 1977 estimate of \$24.0 million by over \$12.1 million. Table 1 summarizes the growth in costs and compares it to the estimate presented to the 1977 Legislature.

Subsequent chapters of this report examine the factors which led to the increase in costs and recommend changes to strengthen state controls over building costs.

¹Minn. Laws (1979), ch. 338, §9(a) and ch. 336, §10.

²The figure cited above includes only DOC's requests for major items. DOC is also requesting funds to purchase minor furnishings and supplies and to hire staff.

TABLE 1

COMPARISON OF ESTIMATED COSTS TO ACTUAL COSTS

| Estimated Costs (1977) | | Estimated Costs (1979) | | Appropriations | |
|-----------------------------|--|------------------------|--|-----------------------|------|
| Amount | Purpose | Amount | Purpose | Amount | Year |
| \$21,600,000 | Planning and other non-building expenses, construction, sitework, and fixed and built-in equipment | \$31,800,000 | Planning and other non-building expenses, construction, sitework, and fixed and built-in equipment | \$ 800,000 | 1976 |
| 1,900,000 | Furnishings | 4,291,000 | Equipment and furnishings | 20,800,000 | 1977 |
| 500,000* | Industry equipment | | | 10,200,000 | 1979 |
| | | | | 2,868,000** | 1979 |
| | | | | 1,418,000 (requested) | 1981 |
| \$24,000,000 | | \$36,091,000 | | \$36,086,000*** | |
| COST OVERRUN = \$12,086,000 | | | | | |

*The cost of industry equipment was not separately itemized in the Master Plan but was mentioned by DOC officials at some 1977 legislative hearings.

**The total amount of contingency funds appropriated in 1979 was \$3,000,000. The portion (\$132,000) used to hire initial staff for the prison is not included in the figure listed above.

***Since construction is not complete, actual costs could ultimately be either slightly more or less than the appropriations listed here.

II. BREAKDOWN OF THE INCREASED COSTS

Since 1977, the total cost of the new prison has risen from \$24.0 million to \$36.1 million. If the costs of movable furnishings and industry equipment are excluded, then costs have risen by \$12.0 million from the original \$21.6 million to \$33.6 million. Approximately two-thirds of the \$12.0 million cost overrun resulted from two factors. First, the size of the prison increased by 37 percent over the plan presented to the 1977 Legislature. The additional space increased costs by approximately \$4.7 million. Second, there was a 15-month delay in completing building plans and beginning most of the construction work. The delay added about \$3.3 million to project costs. The remainder of the cost overrun is attributable to a number of factors listed in Table 2.

This chapter briefly examines each of the factors which added to project costs. Chapter III explains how some of the increased costs could have been avoided through better reporting to the Legislature and better control over the design process.

A. ADDED SPACE

The Master Plan presented by DOC to the Legislature in February 1977 recommended construction of a building which would contain 240,110 gross square feet. By 1979, however, the size of the facility had increased by 37 percent to 330,000 square feet, adding an estimated \$4.7 million to the construction cost.

The increase of approximately 89,900 square feet can be divided into four categories. Space was added:

1. By the Department of Corrections to provide additional program, living, and administrative space (38,700 square feet at a cost of approximately \$2.5 million);
2. By the consultant architects to meet DOC's internal security and circulation requirements and to provide space for areas listed "as required" in the Master Plan but not included in the original estimate of square footage (43,800 square feet at a cost of approximately \$1.8 million);
3. To meet various code requirements (4,900 square feet at a cost of approximately \$0.4 million); and

¹The estimates of the cost of the additional space are based on \$/square foot figures supplied to us by the consultant architects for the different types of space added. According to them, the space needed to add electrical transformers to each of the prison's complexes did not result in a net increase in costs. The cost of the additional space was offset by reduced electrical wiring costs.

TABLE 2

SOURCES OF THE INCREASED COSTS

| Cost Increase Due To: | Amount of Increase* (in millions) | |
|---|--------------------------------------|---------------|
| <hr/> | | |
| BUILDING COSTS | | |
| Added Space | \$4.7 | |
| Time Delay | 3.3 | |
| Unanticipated Inflation | 0.8 | |
| Sales Taxes Omitted From Estimate | 0.6 | |
| Unanticipated Life Safety Features | 0.5 | |
| Additional Energy Conservation Features | 0.4 | |
| Additional Structural Support Needed | <u>0.3</u> | |
| Subtotal | | \$10.6 |
| | | |
| NON-BUILDING COSTS | | |
| Construction Management Costs Omitted | \$0.9 | |
| Additional Architectural Fees and Services | 0.4 | |
| Miscellaneous | <u>0.1</u> | |
| Subtotal | | <u>\$ 1.4</u> |
| TOTAL INCREASE IN COSTS | | \$12.0 |
| <hr/> | | |

*The estimated cost increases due to added space, time delay, unanticipated inflation, and additional energy conservation and life safety features were provided by DOA and its consultants during 1979 legislative hearings.

4. To add an electrical transformer to each complex in order to cut construction costs (2,500 square feet at no additional cost).

The areas in which DOC or the architects added space are listed in Table 3 and discussed below. Table 3 is not intended to provide an exhaustive list of every area which has increased or decreased, but does list the major sources of the 89,900 square foot increase.

1. SPACE ADDED BY THE DEPARTMENT OF CORRECTIONS

The Department of Corrections added approximately 38,700 square feet to the prison proposed in the Master Plan. The largest increase made by DOC was in the prison industry area. The industry area grew by approximately 33,945 square feet from the 17,550 square feet in the Master Plan to the final total of 51,495 square feet.¹ We estimate that at least 29,000 square feet of the 33,945 square foot increase were added by DOC.² The remainder of the increase is included in Table 3 under circulation space and "as required" areas added by the architects.

DOC added space for industry programs for a number of reasons. First, DOC decided to provide enough space to permit at least 200 inmates to work in prison industries. Originally, DOC told the Legislature that 75 to 150 inmates would work in the industries. Second, DOC industry officials revised their initial estimates of the space needed per worker upward. Because DOC had not decided what industries would be located at the new prison, the architects had to rely on DOC's estimates of how much production and storage space would be needed. DOC's estimates began to grow over the amounts specified in the Master Plan as early as December 1976.

DOC also added space to a number of other areas. According to the consultant architects, at least 4,000 square feet were added to the medical complex to provide living spaces comparable to the prison's other housing complexes. The added space includes various lounge areas and television and music rooms for medical or psychiatric patients.

Space was also added to the prison's visiting areas and to the public/visiting lobby and stairs in the administration building. A portion of the 3,800 square foot increase to these areas was offset by omitting a receiving and orientation unit of approximately 1,600 square feet.

¹The final figure includes 48,995 square feet located above four of the prison's housing complexes and 2,500 square feet of storage space in the administration (or core) building.

²The consultant architects estimate that DOC added 31,445 of the 33,945 square feet added to the industry area.

TABLE 3

ADDED SPACE

| Area Enlarged | Square Feet Added* | |
|--|--------------------|--------------|
| <hr/> | | |
| BY DEPARTMENT OF CORRECTIONS | | |
| Industry areas | 29,000 | |
| Inmate lounge areas and television rooms in the medical complex | 4,000 | |
| Chapel and chaplain's office area | 3,500 | |
| Visiting areas | 2,600 | |
| Public/visiting lobby and stair | 1,200 | |
| Receiving and orientation unit | <u>(1,600)</u> | |
| Subtotal | | 38,700 |
| | | |
| BY CONSULTANT ARCHITECTS | | |
| Circulation and other nonassignable space necessary to meet requirements in the <u>Master Plan</u> | 37,800 | |
| Areas listed "as required" in the <u>Master Plan</u> but not included in the original estimate of square footage | <u>6,000</u> | |
| Subtotal | | 43,800 |
| | | |
| TO MEET CODE REQUIREMENTS | | |
| Medical facility rooms, handicapped ramps, utility rooms, and corridors | 3,600 | |
| Below ground exit passages | <u>1,300</u> | |
| Subtotal | | 4,900 |
| | | |
| TO CUT ELECTRICAL COSTS | | |
| Added electrical transformers to each complex | <u>2,500</u> | |
| Subtotal | | <u>2,500</u> |
| TOTAL INCREASE IN SPACE | | 89,900 |

*The square footage figures were verified by the consultant architects.

Finally, DOC added space for the chapel and chaplain's office area. Originally, the chapel and chaplain's office area was to be funded from a gift from the Reverend Francis J. Miller Memorial Foundation, Inc. As a result, this area was listed in the original space program but not included in the total of 240,110 square feet upon which cost estimates were based. Because the foundation's gift was ultimately used at the Minnesota State Prison at Stillwater, the chapel and office area had to be added to the proposed 240,110 square feet and funded from state appropriations. The chapel and office area, however, was also expanded by DOC from the amount of space originally planned. The loss of separate funding accounts for about 2,000 square feet, or about 57 percent of the additional 3,500 square feet. The other 1,500 square feet (43 percent) were added to the original space program.

2. SPACE ADDED BY THE CONSULTANT ARCHITECTS

The original space program called for a usable space of 157,780 net square feet. To calculate total area, the consultant architects added 33 to 60 percent for circulation and other nonassignable space. Overall, 82,330 square feet were added to the 157,780 usable square feet, bringing the total or gross square footage to 240,110.

The factors used by the architects to estimate circulation and other nonassignable space were based on data from existing correctional institutions. However, the proposed facility was quite unlike existing prisons. The level of security desired by DOC, when combined with the facility's other unique operational characteristics, required more circulation space than do existing prisons. As a result, the consultant architects later added 37,780 square feet of circulation and other nonassignable space to meet the program objectives set forth by DOC in the 1977 Master Plan.

In addition, the consultant architects added approximately 6,000 square feet for toilets, waiting areas, janitor closets, sally ports, and various other work stations. These spaces were listed "as required" in the Master Plan and not included in the architects' estimate of 240,110 square foot. Although the architects maintain that these areas could not be accurately determined when the Master Plan was prepared, it is significant to note that the architects did not even provide an estimated allowance for these areas in their estimate of square footage.

3. SPACE ADDED TO MEET CODE REQUIREMENTS

Approximately 4,900 square feet were added to the proposed facility in order to meet code requirements not reviewed prior to the preparation of the Master Plan. In the medical facility, rooms were enlarged, corridors were widened, separate clean and soiled utility rooms were provided, and handicapped ramps were added in order to

meet Minnesota Department of Health (MDH) rules on hospital construction. Altogether, 3,600 square feet were added to the medical complex. Another 1,300 square feet were added to the gymnasium in order to provide below ground exit passages required by state building code officials.

On the one hand, the need for below ground exits could not have been anticipated because building code provisions for correctional facilities are not very specific and are subject to interpretation. On the other hand, MDH rules on hospital construction are rather specific and could have been anticipated if DOC had consulted with MDH during planning conducted in 1976. DOC and the consultant architects learned of the MDH requirements on April 28, 1977, about two and one-half months after the Master Plan had been presented to the 1977 Legislature.

B. TIME DELAY

A second major factor which added to project costs was a 15-month delay. According to DOA and its consultants, the delay in getting the project ready for construction bids added approximately \$3.3 million to project costs.

The project was originally scheduled to go out for bids in December 1977. Construction work was to begin in early March 1978.

Bids on the excavation work were actually taken in September 1977. Excavation work began in February 1978. Bids were taken on the site utilities and reinforcing steel in July 1978 and on the structural concrete in August 1978. However, bids on the largest construction contracts were not taken until March 1979 for work expected to begin during June 1979. In addition, approximately 15 percent of the work was bid after March 1979. On average, the project was delayed 15 months from March 1978 to June 1979.

Most of the delay can be attributed to the large amount of time spent considering ways to cut project costs. We estimate that approximately six to seven months of the delay was spent developing and reviewing budget reductions.

After a cost estimate based on design development drawings was prepared in September 1977, more than four months elapsed before the Division of State Building Construction approved a revised set of design development drawings and authorized the architects to begin preparing construction drawings. Between September 1977 and February 1978, various ways of reducing the project's size and costs

¹The design process consists of five steps: (1) development of a space program and design concept, (2) schematic design, (3) design development, (4) construction drawings, and (5) preparation of bid documents.

were suggested by the consultants and reviewed by DOC. Some of the suggested cuts were approved by DOC. The project was delayed another two to three months after a June 1978 cost estimate showed costs to be almost \$12 million over budget.

The remainder of the 15-month delay resulted from a number of factors. First, the Department of Corrections ordered design changes and additions throughout the design process. Additional time was required to make the design changes desired by DOC. Second, between September and December 1978, DOC reconsidered the cuts agreed to in August 1978. The time taken to reconsider the cuts added to the delay. In addition, because DOC restored many of the cuts, it became impossible to put various large construction contracts out to bid prior to the 1979 legislative session. Additional funds were needed before the major bid packages could be awarded.

C. OTHER FACTORS

While added space and time delays account for \$8.0 million of the \$12.0 million cost overrun, the responsibility for the remaining \$4.0 million is divided among a number of factors. The \$4.0 million consists of:

- \$1.5 million for items omitted from the budget in the 1977 Master Plan,
- \$1.4 million for items which were not anticipated in 1977,
- \$0.7 million for additional energy conservation and structural features, and
- \$0.4 million for additional architectural fees and services.

The \$1.5 million omitted from the budget includes \$0.9 million for construction management services and \$0.6 million for sales taxes not included in construction cost estimates. The budget in the 1977 Master Plan did not include the costs of hiring a construction manager to provide cost estimates and to supervise construction, although DOA planned to hire a construction manager. Fees and expenses for construction management services have cost \$884,000, or approximately \$0.9 million. The original construction cost estimates were prepared by an out-of-state firm whose employees were not aware that sales tax must be paid on construction materials used in Minnesota state building projects. When the local construction manager made his first estimate in April 1977, it was discovered that approximately \$0.6 million in sales tax had not been included in previous estimates.

Approximately \$1.4 million in increased costs resulted from items which could not have been anticipated in early 1977. The \$1.4 million consists of \$0.8 million for an unanticipated increase in the

inflation rate from 8 to 12 percent, \$0.5 million for various life safety features added, and approximately \$0.1 million for higher non-building costs. The additional life safety features are, according to the consultant architects, primarily code requirements imposed by the State Building Code and the Minnesota Department of Health rules on hospital construction. The State Building Code contains one page on prison construction and is subject to more than one interpretation. Because DOA's Building Code Division interpreted the code differently than the architects had originally, additional features were added to the facility. Non-building costs increased by \$163,500 because the City of Oak Park Heights imposed a city sewer hook-up charge which could not have been anticipated in 1977. The state is attempting to recover part of this charge through litigation. Because other miscellaneous non-building costs have been less than originally estimated, the additional cost is included here at \$0.1 million.

An increase of approximately \$0.7 million resulted from the addition of certain energy conservation and structural features. This figure includes \$0.2 million for a computerized energy management system, \$0.2 million for a heat reclaim system, and \$0.3 million for additional structural support for the facility. The 1977 Master Plan recommended that the facility be built into a hillside and use a heat reclaim system, instead of constructing a separate power plant to heat the prison. The exact details and costs of such a system had not, however, been worked out by the time the Master Plan was prepared. The heat reclaim and energy management systems ultimately cost about \$0.4 million. The remaining \$0.3 million was added when consultant engineers later determined that additional structural support was necessary if the facility were to be built into a hillside as proposed.

The \$0.4 million in increased architectural fees and services consists of: \$120,400 for higher fees for basic design services; \$65,635 for the redesign of previously approved work; \$60,000 for special inspections required by the State Building Code; \$100,000 for more frequent construction inspections; \$27,600 to design the industry area; and \$40,255 to design, select, and supervise the installation of furniture and fixtures.² Originally, the fee for basic design

¹The 1977 Master Plan included \$1,480,000 for non-building costs, but provided no breakdown of this figure into architectural fees and other expenses. Since fees for the consultant and liaison architects should have been estimated to be about \$1,180,000 in early 1977, we estimate that approximately \$300,000 was left for miscellaneous non-building expenses such as permits, sewer and water charges, and testing. To date, approximately \$376,000 has been spent on miscellaneous expenses or about \$0.1 million more than originally expected.

²The architect's contract indicates that the \$100,000 is for special inspections required by the State Building Code. Division of State Building Construction officials informed us, however, that most of the \$100,000 is being used to provide more frequent inspections of the electrical and mechanical construction than was originally planned.

services was estimated to be \$1,080,000. When DOA and the consultant architects entered into a contract for the construction drawings and remaining phases of work in January 1978, the total fee was adjusted upward to \$1,200,400. The consultant architects believed the adjustment was proper because the complexity of the project had increased and the estimated construction cost had increased to \$21,826,000. The additional \$65,635 was needed because the Department of Corrections made changes in the previously approved design of the food service and industry areas and the architects were required to redetail doors to accommodate a change in the lock system.

D. SUMMARY

It can be understood why DOA and DOC had difficulties constructing the prison within the \$21.6 million requested in 1977. As we have seen above, certain factors would have created budget problems even if the project had proceeded on schedule and DOC had not added any space. First, approximately \$2.7 million in additional costs resulted because the consultant architects: (1) did not include sufficient nonassignable space to satisfy the unique requirements for this prison (\$1.8 million); (2) did not include sales taxes in early construction cost estimates (\$0.6 million); and (3) later discovered that additional structural support would be necessary in order to build the prison into a hillside as proposed (\$0.3 million). Second, approximately \$1.8 million of additional costs were not anticipated in early 1977 but were required in order to meet the program requirements contained in the Master Plan. Included in the \$1.8 million figure are: \$0.8 million for an unanticipated increase in the inflation rate, \$0.5 million for unanticipated life safety features, \$0.4 million for additional space to meet code requirements, and \$0.1 million for unanticipated non-building expenses. Finally, another \$1.3 million was needed for the cost of construction management (\$0.9 million) and the energy conservation features added (\$0.4 million). Although it was not absolutely necessary to add the heat reclaim or energy management systems, it was cost effective. DOA estimated that the energy savings from these features will exceed the additional \$0.4 million in costs within about seven years. In total, increased costs of about \$5.8 million affected the executive branch's ability to construct the prison within appropriated funds.

Although it is easy to understand why the project experienced budget problems, the following questions remain:

- Why was the cost estimate presented to the 1977 Legislature inaccurate?
- Did the executive branch inform the Legislature about increases in the prison's cost and size in a timely and accurate manner?

- Why was DOC permitted to add space at a cost of \$2.5 million?
- Why was the project delayed at a cost of \$3.3 million?

These questions are addressed in the next chapter.

III. ANALYSIS OF THE COST OVERRUN

In this chapter, we examine why the \$12.0 million cost overrun occurred. Our principal findings are:

- The Department of Corrections requested the appropriation for construction too soon.
- The consultant architects' initial estimates of square footage and cost were inaccurate.
- The Department of Administration did not adequately review the architects' space and cost estimates prior to the presentation of the Master Plan to the 1977 Legislature.
- The two departments failed to inform the Legislature about increases in project cost and size in a timely and accurate manner.
- The departments began construction of the prison without informing the Legislature about the use of "fast-track" construction and the increase in project cost and size.
- The Department of Administration permitted the Department of Corrections to add space to the facility even though the project already had budget problems, failed to minimize the time delays on the project, and did not inform the Legislature about options for reducing costs in a timely manner.

We conclude that if the executive branch had deferred the request for construction funds until the 1978 legislative session it would have been able to provide the Legislature with a more accurate estimate of what it would cost to build the prison DOC wanted to build. Thus, the Legislature might have known before appropriating construction funds that the cost of building and equipping the prison would be at least \$30 to \$32 million rather than the \$21.6 million estimated in 1977. In addition, we conclude that, if the project had been approved by the 1978 Legislature, between \$2 and \$3 million might have been saved by avoiding some of the delays which increased project costs.

Even though the appropriation was requested too soon and some budget problems were inevitable, we conclude that the prison could have been constructed and equipped for less than \$33.6 million. Some of the \$3.3 million required because of delays totalling 15 months could have been avoided. Between \$0.7 and \$1.4 million could have been saved by limiting the expansion of the industry areas. According to the consultant architects and the former Commissioners of Administration and Corrections, additional funds could have been saved by reducing square footage and choosing less costly features for the facility.

These savings were not realized because: (1) the Division of State Building Construction did not adequately monitor the project in order to minimize delays; (2) the Department of Administration and the Division of State Building Construction believed that DOC should make nearly all decisions regarding the size and characteristics of the prison, and DOA did not inform the Legislature in a timely manner about alternatives which might cut costs; (3) the Legislature was not kept fully and accurately informed about increases in size and cost; and (4) the executive branch had already committed the state to \$6.3 million of construction work by the time the Legislature was informed about the full increase in size and cost.

Many of the problems experienced on this project are due to certain basic weaknesses in the executive branch's control over building projects. These weaknesses are:

- The lack of guidelines for determining when planning for a building project has sufficiently developed to permit a state agency to request construction funding from the Legislature, and the lack of procedures to ensure sufficient review of the cost estimate presented to the Legislature;
- The lack of procedures to ensure that increases in project scope or cost, or plans to begin construction work, are reported to the Legislature in a timely manner; and
- DSBC's lack of adequate policies and procedures for dealing with potential cost overruns and for reviewing requested additions to project scope.

Our findings, plus our recommendations for correcting these weaknesses and improving the state's control over building costs, are discussed below.

A. THE APPROPRIATION REQUEST

Many of the budget problems on this project started with the request for construction funds in 1977. The requested appropriation proved to be inadequate for two reasons. First, the cost estimate and space program presented to the 1977 Legislature were based on a very preliminary stage of design. Many uncertainties about the cost and size of the proposed facility existed in early December 1976 when the preliminary estimate and space program were completed. Second, some costs which should have been included were omitted from the estimate of project costs. As a result, it was almost inevitable that the project would have budget problems. These findings are discussed below.

1. THE APPROPRIATION REQUEST FOR CONSTRUCTION FUNDS WAS MADE ONE YEAR TOO SOON BY DOC, WAS BASED ON INADEQUATE ESTIMATES OF SQUARE FOOTAGE AND COST, AND WAS NOT SUFFICIENTLY REVIEWED BY DOA.

The cost estimate presented to the 1977 Legislature was based on the conceptual design and space program completed by the consultant architects in December 1976. Generally, estimates prepared at this stage of design are rather tentative. In this case, there was even more reason to question the adequacy of the estimate than usual. The proposed facility was quite unlike any other prison ever built in the United States. On the one hand, the Department of Corrections wanted to provide inmates with a pleasant, normative environment. On the other hand, the level of internal and external security desired by DOC was unmatched by any existing prison. In addition, the design concept called for the facility to be built into a hillside unlike other prisons.

The consultant architects told us that when the conceptual design estimate was developed there was considerable uncertainty about many aspects of the project. We identified the following uncertainties:

- At the conceptual design stage, the architects used data from other prisons to estimate the amount of circulation and other nonassignable space needed for the proposed facility. DOC, however, had required that the travel routes of staff, prisoners, and visitors be as separate as possible for security reasons. As a result of this unique requirement and other requirements, the consultant architects added nearly 38,000 square feet, an increase of 16 percent, to the facility during the first half of 1977.
- The amount of space needed for toilets, waiting areas, janitor closets, sally ports, and certain work stations could not be accurately determined at the time the Master Plan was prepared. The Master Plan listed these areas "as required" and did not include any allowance for them in the proposed 240,110 square feet. According to the State Architect, at least 6,000 square feet were later added for these areas.
- The Master Plan recommended that the facility be built into a hillside and contemplated the use of a heat reclaim system. The exact details and costs of this unique feature had not, however, been worked out at the conceptual design stage. Ultimately the heat reclaim system, a computerized energy management system, and additional structural support for the hillside design increased project costs by \$0.7 million.

¹In fact, at a project meeting on October 8, 1976, the principal designer told DOC planners that there were no maximum security facilities to visit which reflected DOC's thinking.

- The medical facility plans had not yet been reviewed by the Minnesota Department of Health (MDH) for compliance with MDH rules on hospital construction. On April 28, 1977, the architects and DOC planners reviewed the medical facility plans with MDH officials. According to the architects, the additional space and other features required by MDH rules added about \$531,100 to project costs.

In addition, as the architectural plans progressed, the Department of Corrections began to reassess its space needs. As early as December 30, 1976, DOC planners told the architects that more industry space was needed than was allocated in the original space program. Ultimately the industry space nearly tripled, growing from 17,550 to 51,495 square feet. In May 1977, DOC instructed the architects to make an extensive redesign of the facility's administration building. According to the architects, the net effect of the changes to the administration building was that approximately 12,000 square feet were added.

Despite these uncertainties, neither DOA nor its consultants cautioned the Legislature about the tentativeness of the cost estimate or the possibility that the appropriation request would be inadequate. A conceptual design estimate may be successfully used to request a construction appropriation on a relatively standard project. It was inappropriate, however, to use a conceptual design estimate as a basis for requesting construction funds on a project as unique, complex, and large as the prison.

In this case, the request for construction funds should have been deferred until the 1978 legislative session. The Legislature would have been presented with a more realistic estimate of the project costs based on a more advanced stage of design. In addition, the project would likely have cost less than it ultimately did, because most of the construction could have begun after the 1978 session instead of the 1979 legislative session. We estimate that between \$2 and \$3 million might have been saved if the appropriation request had been deferred until the 1978 legislative session.

Recommendation: The executive branch should not request construction funds for large, complex, or unique projects until architectural plans have progressed through design development or working drawings.

This recommendation should generally be applied to requests for new buildings such as prisons, hospitals, science and laboratory facilities, theatres, and fine arts facilities. It could also be applied to complex and extensive renovation or remodeling projects where determined to be appropriate.

Implementing the recommendation will require the executive branch and the Legislature to determine: (1) which projects should receive planning funds before construction funds are appropriated; (2) when plans for those projects have developed sufficiently to permit the user agency to request funding for construction; and (3)

what amount of funds will be required to complete each project proposed for construction funding. Currently, it is generally assumed that DOA's Division of State Building Construction (DSBC) reviews the adequacy of the cost estimate presented to the Legislature when an executive branch agency requests construction funding for a building project. DOA, however, has no statutory responsibility to review appropriation requests, although it does so if requested by an agency. In the case of the prison, DOA did not become particularly involved in reviewing the cost estimate or in deciding when to request construction funds. As a result, the Legislature had to rely almost exclusively on the estimate provided by the consultants.

Recommendation: The Legislature should make the Department of Administration specifically responsible for reviewing appropriation requests made by state agencies under its supervision. Based on its review, DOA should recommend to the Department of Finance, the Governor, and the Legislature whether planning or construction funds should be appropriated and what amount of funds will be required to complete each project proposed for construction funding.

This recommendation should be applied to all large projects proposed by state agencies whose construction projects are subject to DOA's supervision and control. We suggest that it at least be applied to projects with estimated construction costs in excess of \$1 million.

2. CERTAIN COSTS WERE NOT INCLUDED IN THE ORIGINAL COST ESTIMATE.

Another factor which created budget problems on this project was the omission of two items from the original cost estimate. First, the cost of construction management services, estimated at \$700,000 in early 1977 and now at \$884,000, was not included in the estimate of non-building costs. Second, the architects failed to include state sales tax on construction materials in their estimate of building costs. The omitted sales tax accounts for approximately \$600,000 of the cost overrun.

According to the State Architect, the cost of construction management services was omitted because it was believed that the construction manager would save the state as much in construction costs as his services would cost. As a result, no amount was included in the budget for construction management, even though this was DOA's first experience in hiring a construction manager.

We asked the United States General Services Administration (GSA) about its procedure for budgeting for construction management services, because GSA has had considerable experience using construction management. According to the Region 5 Director of Design and Construction Services for GSA's Public Building Service, GSA has included the cost of construction management in cost estimates. GSA

does not fund the cost of construction management from anticipated savings in construction costs.

Recommendation: If construction management is used on any future project, the Department of Administration should include the estimated cost of construction management in project cost estimates.

The state sales tax on construction materials was probably omitted because initial estimates were prepared by out-of-state firms unfamiliar with Minnesota tax law. Nevertheless, this error should have been caught by the consultant architects from Minnesota or the Division of State Building Construction, if the estimates and their underlying assumptions had been carefully reviewed. The sales tax was first included in late April 1977 when the local construction management firm prepared its first estimate.

It was recommended above that DOA be given specific responsibility for reviewing cost estimates. DOA should ensure that consultants and user agencies have included all costs which can be anticipated, such as sales tax or construction management fees, in their estimates of project cost.

B. REPORTING TO THE LEGISLATURE

A second major factor which enabled the cost overrun to occur was the lack of reporting by the executive branch to the Legislature. Except for a few isolated instances, the Department of Administration and the Department of Corrections did not inform the Legislature of the growth in project cost and size. In particular, we found that:

- DOA and DOC did not inform the 1977 Legislature about revised estimates of cost and size made before or during the 1977 legislative session.
- Between June 1977 and February 1979, DOA and DOC did not keep the Legislature fully and accurately informed about increases in the size and cost of the project.
- Although the 1977 Legislature was not informed that construction would be "fast-tracked," DOA permitted partial construction of the facility without legislative review or approval of the increases in project cost and size.

¹GSA has also discontinued the use of construction management within the last year because it has found that the advantages of construction management in the private sector are difficult to realize in the public sector.

These findings and their implications are discussed below in detail.

1. THE DEPARTMENT OF ADMINISTRATION AND THE DEPARTMENT OF CORRECTIONS DID NOT INFORM THE 1977 LEGISLATURE ABOUT REVISED ESTIMATES OF COST AND SIZE MADE BEFORE OR DURING THE 1977 LEGISLATIVE SESSION.

The Department of Corrections first presented the Master Plan for the new prison to a joint meeting of House and Senate committees on February 8, 1977. At that meeting, DOC requested \$20.8 million to finance the construction of a new prison containing 240,110 square feet. Project costs were estimated to be \$21.6 million, including the \$0.8 million already appropriated for architectural planning in 1976.

Throughout the 1977 legislative session, DOC officials presented their request to various legislative committees. At these meetings, legislators were told that estimated project costs were either within or close to the proposed budget of \$21.6 million. DOC apparently did not inform legislators that the size of the facility had increased from the proposed 240,110 square feet.

We found, however, in reviewing the estimates of size and cost prepared before and during the 1977 legislative session, that project size and cost had increased since the Master Plan was completed in December 1976. In particular, we found that:

- The original space program was outdated before it was presented to the Legislature.
- Estimated project costs were never really within budget after December 1976.
- The last cost estimate provided to the Legislature prior to approval of the appropriation request was not an accurate estimate of project costs.

a. The Original Space Program Was Outdated Before It Was Presented to the Legislature.

By early December 1976, the out-of-state consultant architects had completed the space program and conceptual design for the new prison. On December 10, 1976, the architects and DOC planners presented the space program to the Commissioner of Corrections and his advisory committee. The program included 241,784 square feet on that date.

Following that meeting, the architects proceeded to the next design stage--the development of schematic drawings. At a December 30, 1976 project meeting, the consultant architects presented schematic floor plans to DOC planners and DOA's liaison architect. The consultants informed them that the plans contained an

estimated 267,000 square feet. DOC planners requested that the architects make a number of revisions to the schematic plans. Included among the revisions was a request for more industry space than was included in the original space program.

Despite the increase in square footage which appeared during schematic design, the Master Plan presented to the 1977 Legislature indicated a square footage (240,110) very close to that which the architects had reported at the end of the conceptual design stage in mid-December 1976. None of the project participants have provided us with a satisfactory explanation of why the more up-to-date square footage figure was not used in the Master Plan. DOC planners state that it was solely the decision of the architects to use the figure of 240,110 square feet. The consultant architects informed us, however, that it had been decided that the Master Plan would have to reflect planning as of a given date. We were not able to locate any direct evidence of such a decision; however, an internal DOC memorandum sent to the local consultant architects does seem to indicate that the Master Plan might have to reflect planning as of December 10, 1976.¹

Following the first presentation of the Master Plan to the Legislature on February 8, 1977, DOC planners, the liaison architect, and the State Architect were apparently informed that the consultants' cost estimator had just completed a cost estimate which showed the project to be over budget. The estimate, based on schematic plans completed on January 20, 1977, placed the cost at \$3.1 million over budget and the square footage at 310,274 square feet. The State Architect directed the consultants to reduce the cost to the budgeted amount by simplifying the design of the prison. Initially, the out-of-state architects arbitrarily assumed that the square footage could be reduced by approximately 12 percent down to 272,000 square feet. When the design team attempted to simplify the design and reduce square footage by turning in the angle of the facility, DOC planners rejected the proposed revisions for a number of reasons including poor visibility into inmate rooms and the reduction of industry and storage space. Nonetheless, the local architects stated to us that they were able to reduce the square footage figure close to 272,000 square feet anyway. When they reestimated the square footage using the same drawings used by the cost estimator, the local architects estimated the area to be about 274,300 square feet.

This reduction was, however, only temporary. On April 28, 1977, about three weeks prior to legislative approval of the appropriation request, the construction manager hired by DOA submitted his first estimate. The construction manager estimated the prison's size to be about 300,000 square feet--an increase of about 25 percent over the proposal presented to the Legislature.

¹Memorandum from DOC project director to the Commissioner of Corrections, December 17, 1976.

Although DOA was required by law to present the program and schematic plans to the chairmen of the House Appropriations and the Senate Finance Committees before preparing final plans, the chairmen were not informed that schematic plans contained at least 272,000 square feet. According to the State Architect, the only plan presented to the chairmen was the Master Plan, which indicated that the facility would contain only 240,110 square feet.

Figure 1 illustrates the changes in project size which occurred before and during the 1977 legislative session. It should be emphasized, however, that the figures presented only indicate the number of square feet which the various consultants estimated were on the architectural plans on a given date. The figures do not reflect changes in the plans which were made between estimates.

For example, between February 18, 1977 and April 28, 1977, the official estimate of area stood at 272,000 square feet, based on the schematic plans of January 20, 1977. Between January 20th and April 28th, however, the architects made numerous changes to the plans. Many of the changes were the result of directions given to the architects by DOC planners. Although the official estimate of size remained at 272,000 square feet until April 28th, the trend between February 18th and April 28th was upward.

b. Estimated Project Costs Were Never Really Within Budget After December 1976.

The original budget of \$21.6 million was developed in December 1976 upon the completion of the conceptual design phase. The budget was based on a facility of 240,110 square feet. As was shown above, the planned facility grew in size during December 1976 and January 1977. The next official cost estimate, however, was not completed until February 7, 1977. The architects' cost estimator then estimated costs to be about \$3.1 million over budget, based on the schematic plans of January 20, 1977 which he estimated contained 310,274 square feet. Because the out-of-state architects believed the plans contained only 272,000 square feet, they revised the estimate downward. By March 8, 1977, the estimate was over budget by only \$164,095.

The official estimate of costs rose again, however, on April 28, 1977 when the construction manager issued the first detailed estimate of construction costs. The construction manager's estimate showed project costs to be over budget by \$2.0 million. On May 13, 1977, the estimate was revised downward by \$1.2 million. By May 25th, though, the estimate was revised upward again and was over budget by \$1.9 million.

Figure 2 illustrates the changes which occurred in the official cost estimates prepared during the 1977 legislative session. None of the estimates were within budget, although the March 8th estimate was close.

FIGURE 1
CHANGES IN PROJECT SIZE DURING THE 1977 LEGISLATIVE SESSION

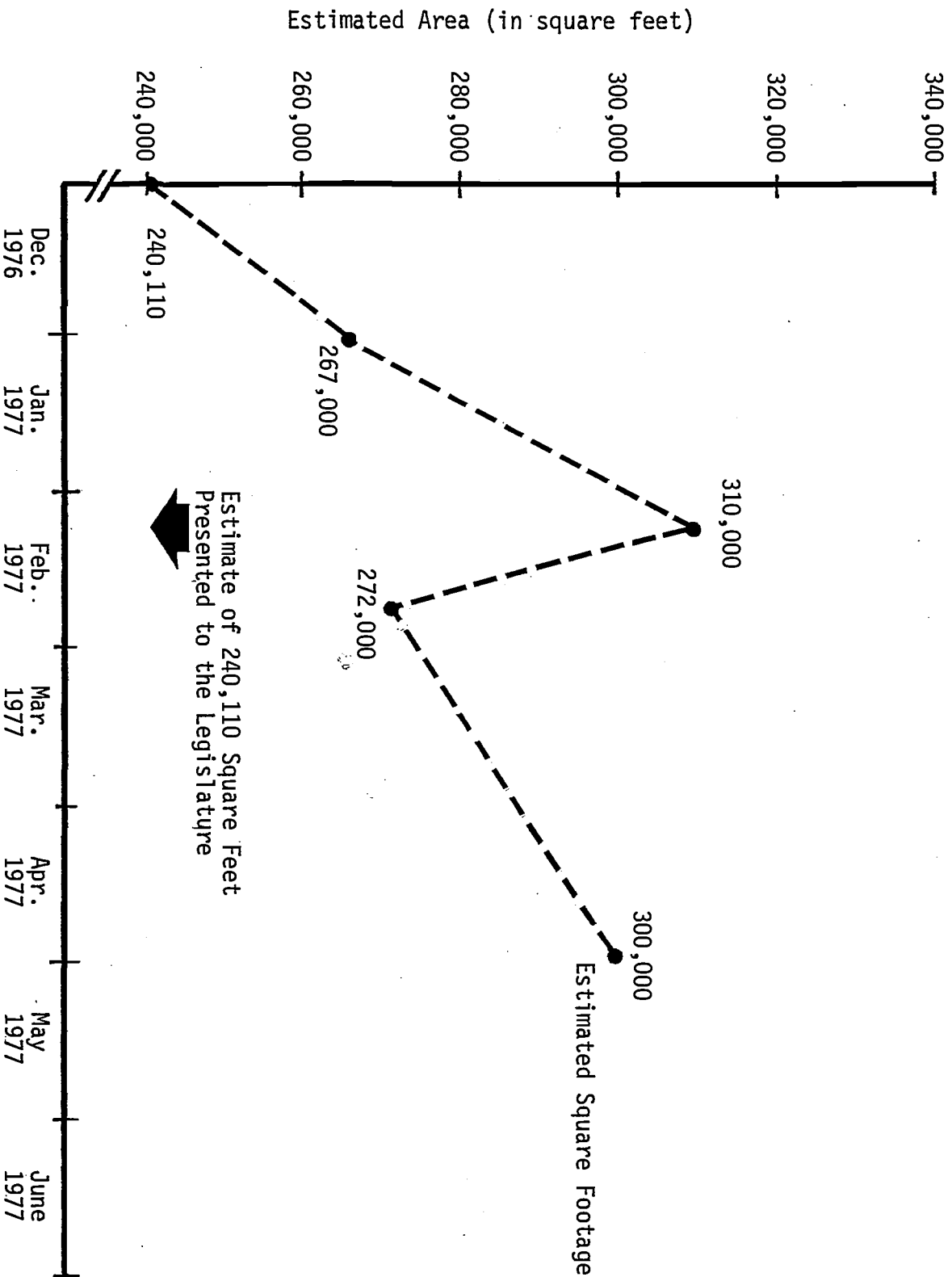
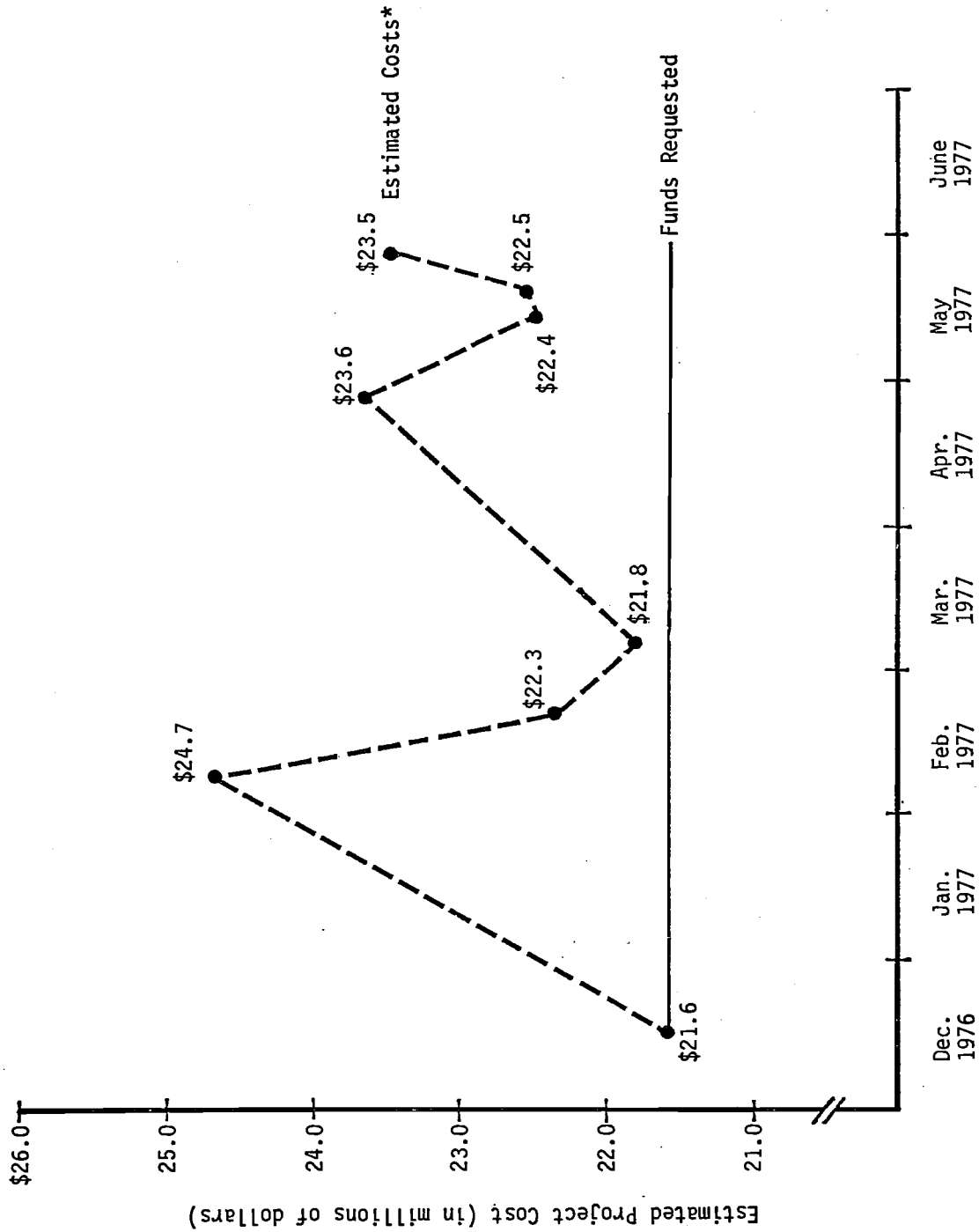


FIGURE 2

CHANGES IN PROJECT COSTS DURING THE 1977 LEGISLATIVE SESSION



*Until June 1978, the consultants' cost estimates included only construction costs. The above estimates of total cost include the additional \$1.6 million which DOA budgeted for non-building costs and for change orders during construction.

These official figures are not always, however, a good indication of what the architects and other planning participants should have known about costs at any point in time during the 1977 legislative session. Because a cost estimate takes time to prepare, it is based only on what is included in the architectural plans prior to when preparation of the estimate is begun. The estimate does not generally reflect the effect of design changes begun or approved after preparation of the estimate is begun.

For example, the March 8, 1977 estimate that showed project costs the closest to the budget was based on the schematic plans of January 20, 1977 and did not incorporate the effects of any design changes which DOC planners requested or the architects made after January 20th. Among those changes not reflected in the estimate were: (1) changes made as a result of a list of concerns and requirements submitted to the architects by the DOC project director on January 21, 1977; and (2) changes made as a result of DOC's rejection of the revised schematic plans on February 23, 1977. As a result, the March 8th estimate was not a good indication of estimated costs between early March and late April because of the direction the project was taking. Project participants, particularly the consultant architects, should have realized that the trend of costs would be upward and that budget problems would again be a concern.

c. The Last Cost Estimate Provided to the Legislature Prior to Approval of the Appropriation Request Was Not an Accurate Estimate of Project Costs.

Legislators from both the House and the Senate were clearly concerned about the project's costs even though they had not been informed about all the cost estimates. For example, at an April 11, 1977 legislative hearing, DOC and DOA officials were asked: "Given all the unknowns, how can we as a finance committee be sure you're not talking about more--that you're not talking about \$30 million a year from now?" DOC's project director responded that: "We're not going to try to sell this project at a lower cost than it is going to be We don't want to stand up before you and give you ballpark figures." The state architect representing DOA said: "The Department of Administration is very confident that this facility can be built for \$20.8 million."¹ DOC officials also indicated that the construction manager was preparing a more detailed cost estimate.

DOC and DOA officials did not, however, provide the Legislature with the construction manager's estimate when it was completed on April 28, 1977. The construction manager estimated the costs of construction, sitework, and equipment to be \$22,031,527 based on available plans showing the building's area to be approximately

¹This material was transcribed from a tape recording of the April 11, 1977 meeting of the House Appropriations Committee's Health, Welfare, and Corrections Division. The \$20.8 million figure refers to the additional funding requested in 1977. The 1976 Legislature had previously appropriated \$0.8 million for planning.

300,000 square feet. This estimate meant that total project costs were \$2,031,527 over budget. Despite this estimate, it was reported at a May 9th legislative committee meeting that estimated costs were much closer to the budget.

On May 13, 1977, several days before the Minnesota Senate and House of Representatives were to consider a bill providing the requested funding, the cost estimate was reduced to \$20,800,527 by cutting the budget for security electronics by about 74 percent from about \$1,671,000 to \$440,000. Some legislators were then informed that the most recent estimate of project costs was \$20.8 million. Acting upon this information, the House passed a bill appropriating \$20.8 million for the prison on May 17, 1977. The Senate approved a similar measure on May 20th. A conference committee bill which included the \$20.8 million was passed by both the Senate and the House on May 21st. The bill was signed into law by the Governor on June 8, 1977.

The \$20.8 million figure provided to legislators underestimated costs, however, for three reasons. First, the reduction in security electronics was not permanent. The large cut in the security electronics budget apparently was not accompanied by a reduction in required equipment or construction work. At the same time that the cut was made, a private firm with expertise in electronic security was asked to prepare a cost estimate based on the same amount and type of equipment included in the project before the cut was made. On May 25, 1977, the firm estimated security electronics costs to be \$1,425,000, which was considerably larger than the \$440,000 used when the estimate was presented to the Legislature. As a result of this estimate and a \$110,913 increase in security window prices, the construction manager revised the construction cost estimate to \$21,896,490. The revision meant the project was \$1,896,000 over budget when the appropriation bill was signed by the Governor. The Governor apparently was not informed of the increase in costs.

Second, it was apparently not made clear to legislators that even the \$20.8 million estimate was over budget. If non-building costs were added to the \$20,800,527 building cost estimate, total project costs would have been \$22,400,527--compared to the total budget of \$21,600,000. In other words, the project was still over budget by \$800,527. Since DOC was requesting an appropriation of \$20.8 million in 1977, the statement that costs were estimated to be \$20.8 million could have been easily, though erroneously, equated with the idea that the requested appropriation would be sufficient to meet all costs.

Finally, none of the estimates incorporated the potential effect that two recently ordered changes in design would have on project costs. First, in late April 1977, the consultant architects and DOC planners learned that the medical facility had to be redesigned to meet Minnesota Department of Health (MDH) standards. It ultimately cost an additional \$531,100 to satisfy MDH requirements. Second, on May 12, 1977, the Department of Corrections directed the consultant architects to make a major redesign of the administration or

core building of the facility. According to the consultant architects, the ultimate effect of the redesign was that approximately 12,000 square feet were added to the facility. Furthermore, the project was delayed for several weeks as a result of the redesign work.

According to DOC planners, DOC officials always presented the Legislature with the most accurate and current information presented to them by the consultant architects. DOC planners also stated to us that the construction manager's first estimate was not presented to the Legislature because the primary designer from New York disagreed with that estimate and continued to state through October 1977 that the project would be within two percent of the budget.

As stated above, the estimates presented were not always accurate. In our opinion, the problems with presentation of cost estimates resulted in part because DOA staff architects were not involved in critiquing their consultants' estimates for presentation to the Legislature. We believe that such problems as occurred on this project can be largely avoided if DOA, not the user agency, is made responsible for reporting cost estimates to the Legislature. Recommendations to implement this goal are detailed later in this chapter.

In this case, if the departments had informed the Legislature about the increases in estimated cost, two alternative outcomes would have been possible: either (1) the Legislature would have deferred consideration of funding for construction until the 1978 legislative session, or (2) the 1977 Legislature would have appropriated more than the \$20.8 million initially requested. Since the prison was needed, some legislators and staff believe the 1977 Legislature would have increased funding for the prison if DOC and DOA had indicated that more detailed cost estimates exceeded the original estimate.

In any case, we believe the outcome would have been beneficial. As pointed out earlier in this report, as much as \$2 to \$3 million might have been saved by reducing delays if the appropriation request had been deferred until 1978. Similarly, if more than \$20.8 million had been appropriated in 1977, the departments might have been able to proceed with fewer delays and to complete the prison for less than \$33.6 million.

2. THE EXECUTIVE BRANCH DID NOT PROVIDE THE LEGISLATURE WITH A REASONABLE OPPORTUNITY TO REVIEW THE INCREASE IN PROJECT SIZE AND COST AND TO INDICATE TO DOA AND DOC HOW MUCH OF THE INCREASE, IF ANY, THE LEGISLATURE WOULD BE WILLING TO FUND.

In March 1979, the Legislature was faced with a very difficult decision. The Department of Corrections and the Department of Administration presented the Legislature with a request for \$10.2 million to complete a 330,000 square foot prison which had originally been only 240,110 square feet. Because the executive branch had

already committed the state to \$6.3 million of construction work and about \$2.0 million in other expenses, the project could not be abandoned or delayed without significant financial loss to the state. In addition, DOC and DOA informed the Legislature that any cutting of the project's scope or cost at that point would not provide a viable facility. In effect, the Legislature was given a take-it-or-leave-it proposition. The DOC project director put it this way: "Build it as it is, or admit it's too big for us and bury the hole."

The Legislature was faced with this difficult decision for two reasons: (1) DOA and DOC had not kept the Legislature fully and accurately informed of increases in the size and cost of the project, and (2) the executive branch had authorized partial construction of the facility even though the Legislature had not been informed about DOA's plans to begin construction work prior to completion of architectural design work.

These findings are discussed below. In addition, we recommend that the Legislature make certain changes in state law. The recommended changes are designed to ensure that the Legislature is given an early warning of cost overruns on future projects and a reasonable opportunity to review alternatives and provide direction to DOA and the state agency involved.

a. DOA and DOC Did Not Keep the Legislature Fully and Accurately Informed About Increases in the Size and Cost of the Project.

In addition to not informing the 1977 Legislature about the increase in project size and cost which occurred during the 1977 legislative session, the Department of Administration and the Department of Corrections failed to inform the Legislature of further increases which occurred after June 1977. We found that:

- DOA and DOC apparently did not inform the Legislature that the facility was larger than originally planned until February 1979.
- DOA and DOC provided the Legislature with very little information about the potential magnitude of the cost overrun until February 1979.
- The cost information provided to certain legislators in January 1978 and late August 1978 underestimated the size of the overrun by as much as \$1.5 million.

(1) DOA and DOC Apparently Did Not Inform the Legislature That the Facility Was Larger Than Originally Planned Until February 1979.

The original space program presented to the 1977 Legislature included 240,110 square feet. As pointed out earlier, however, the original space program was outdated by the time it was presented to the Legislature. In fact, by the end of April 1977, the plans included 300,000 square feet.

By September 9, 1977, only four months after the Legislature appropriated construction funds, the facility had increased in size to approximately 338,000 square feet. Subsequently, estimates of the project's area varied between 300,000 and 332,000 square feet. Figure 3 illustrates the changes in project size which occurred after June 1977.

DOA and DOC apparently never informed the Legislature about the increase in size until February 1979 when they requested another \$10.2 million to complete the project. Instead, on the few occasions that DOC or DOA informed the Legislature that the project was over budget, the departments primarily attributed the overrun to other causes such as inflation.

(2) DOA and DOC Provided the Legislature With Very Little Information About the Potential Magnitude of the Cost Overrun Until February 1979.

Prior to February 1979, DOA and DOC apparently informed legislators of the project's cost overrun on only two occasions. On January 26, 1978, the Commissioner of Corrections and the State Architect informed the House Appropriations Committee's Health, Welfare, and Corrections Division that the project was \$1.4 million over budget and indicated that they would report to the committee on further developments. In late August 1978, the Commissioner of Corrections informally discussed the project with the chairmen of the Senate Finance and House Appropriations Committees and apparently informed them that the project was \$2 to \$3 million over budget due to factors such as inflation.¹ It was not until late February 1979 that the legislative staff for the two committees learned that the two departments would be requesting an additional \$12.0 million to complete the project.²

Thus, legislators were not formally told until late January 1978 that the project had any cost problems. In addition, legislators were not given any reason to suspect that the cost overrun could be anywhere as large as the \$12.0 million requested in February 1979. As a result, legislative hearings to review the cost overrun were not held until March 1979.

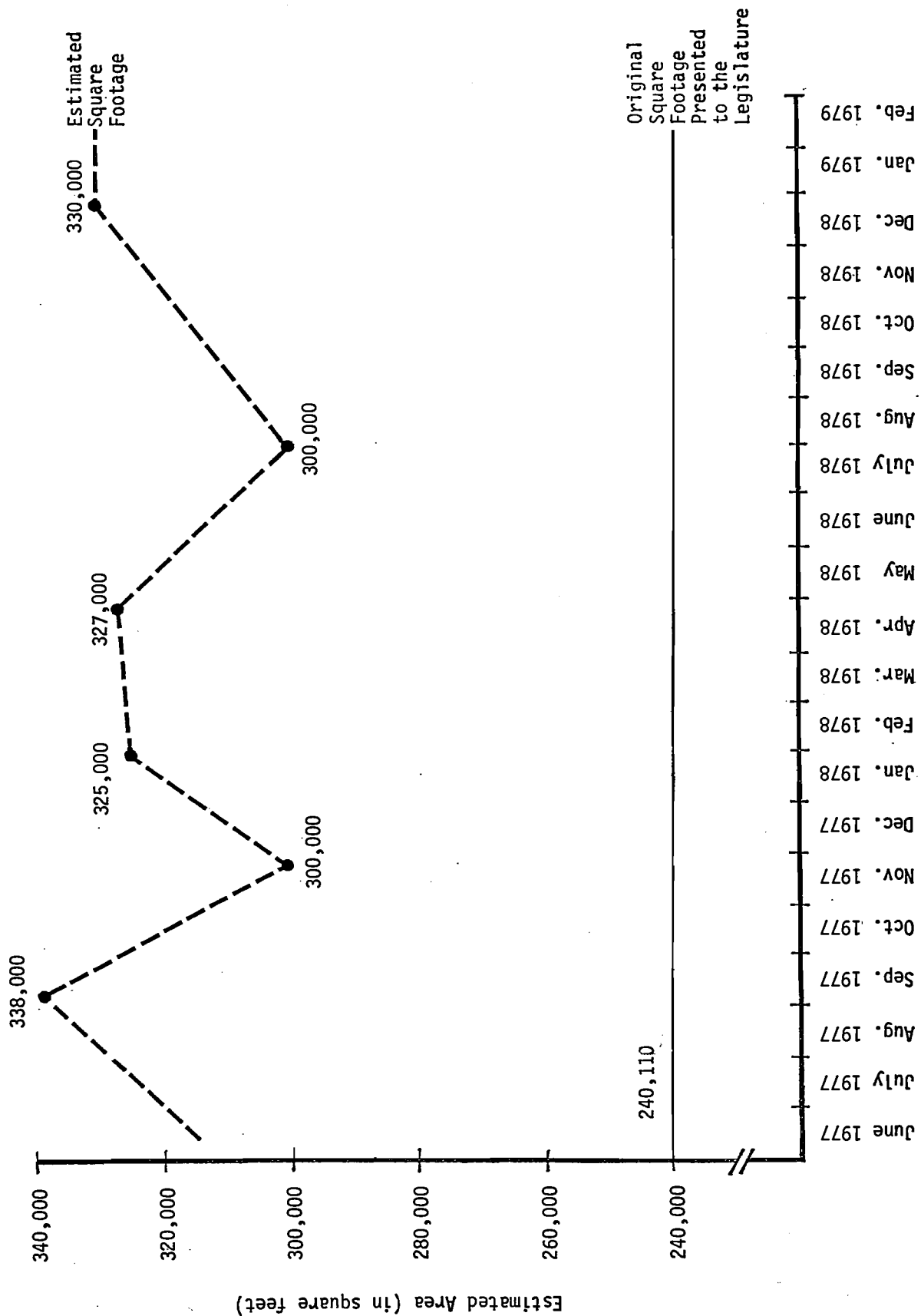
In contrast, DOA and DOC knew as early as April 1977 that the project was about \$2 million over budget. By September 1977, the cost overrun grew to \$3.8 million. The two departments also knew by June 1978 that the project had severe budget problems.

¹The exact details of these conversations cannot be known with certainty because the Commissioner did not provide the committee chairmen with written information on the cost overrun. Our report relies on what the chairmen said the Commissioner discussed.

²The total cost overrun of \$12.0 million includes the \$10.2 million requested by DOA and DOC and \$1.8 million of fixed or built-in equipment and construction work funded out of DOC's equipment budget.

FIGURE 3

CHANGES IN PROJECT SIZE: JUNE 1977 TO FEBRUARY 1979



The construction manager's cost estimate of June 14, 1978 placed project costs more than \$11.9 million over budget. Figure 4 provides a graphic comparison of the official cost estimates to the cost information provided to the Legislature.

It could be argued that it was not necessary to provide the Legislature with the cost estimates which showed the project \$3.8 million over budget in September 1977 and \$11.9 million over budget in June 1978. After all, DOA and DOC made reductions in the scope of the project which reduced the overrun to \$1.4 million in January 1978 and to \$2 or \$3 million in August 1978. These cost figures were then reported by DOA and DOC to key legislators.

In our opinion, however, the executive branch should have reported each major increase in project size or cost to the Legislature as it occurred. Because the two departments did not inform the Legislature about the increase in the size of the project and the cost estimates which showed the project considerably over budget, the Legislature had no reason to suspect that the project could be anywhere near \$12 million over budget. Legislators also had no reason to question the need for even a \$1.4 to \$3 million overrun because they were not informed that the project had substantially increased in size.

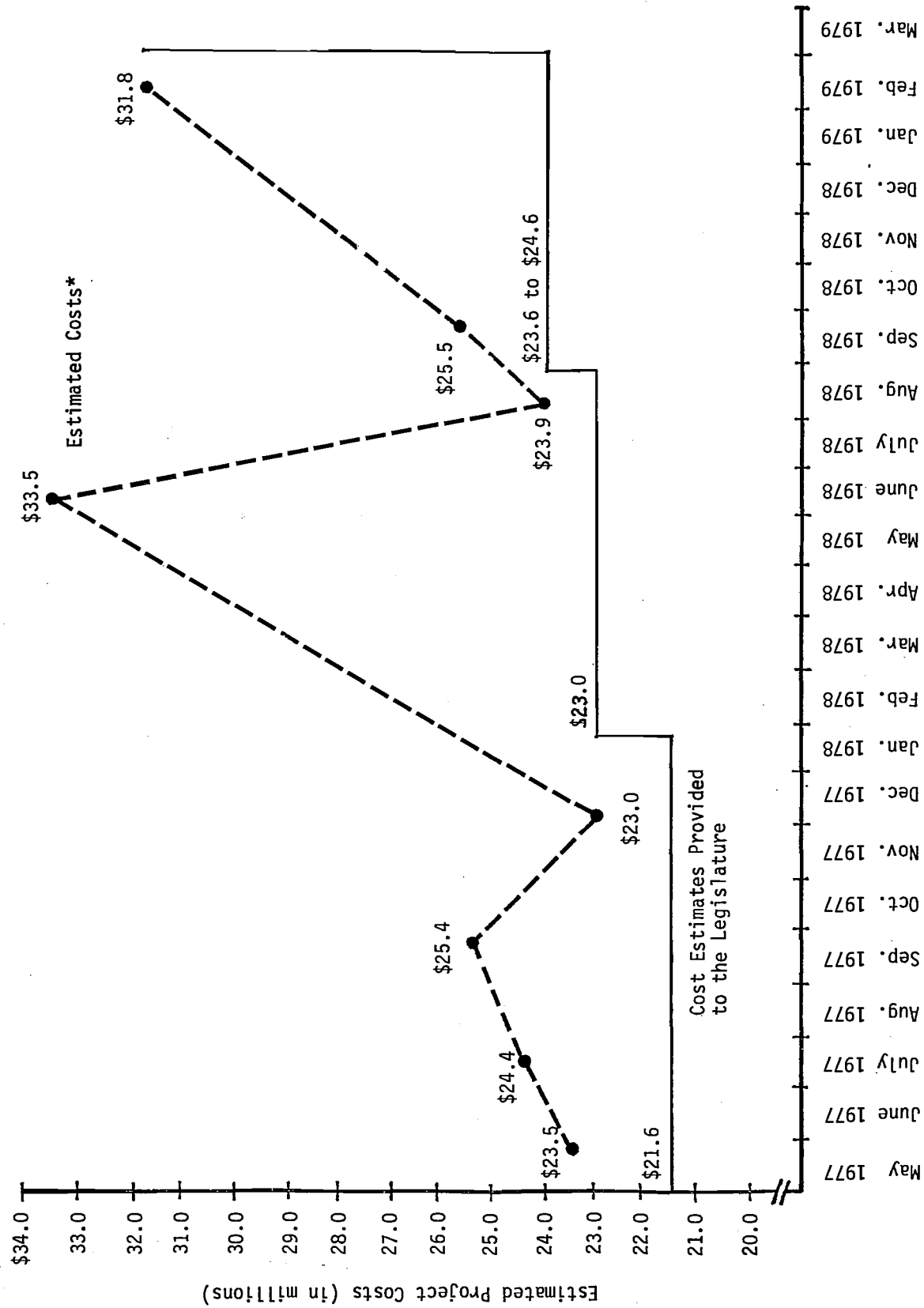
It was also a mistake to inform the Legislature of a \$1.4 million cost overrun in January 1978 and a \$2 to \$3 million overrun in August 1978 without reporting subsequent developments which rendered these cost estimates obsolete. For example, the \$1.4 million overrun was based on a facility of approximately 300,000 square feet. Within eight days after the Legislature was informed about the \$1.4 million overrun, the facility had grown to an estimated 325,000 square feet. About half of the increase occurred because DOC added back a lengthy staff corridor over part of the facility. Other additions included more corridor space to meet state building code requirements and more space for mechanical equipment. Although another cost estimate was not prepared until June 1978, it should have been clear in February 1978 that the cost overrun would exceed \$1.4 million.

The estimate of a \$2 to \$3 million overrun reported in late August 1978 also became obsolete within a short time. By September 9, 1978, DOC reinstated \$1,168,250 of the \$9,743,730 of reductions it had accepted in August 1978 to reduce the \$11.9 million overrun to between \$2 and \$3 million. Between September 9 and September 26, another \$380,000 was added because DOA wanted the heat reclaim and energy management systems retained. As a result, by September 26, 1978 the overrun had increased to about \$3.9 million. Furthermore, during September, DOC began to reconsider many of the other budget cuts it had agreed to in August 1978 and

¹DOC discussed the \$3.8 million overrun with officials from the Federal Bureau of Prisons and the National Clearinghouse for Criminal Justice Planning and Architecture. However, DOC did not inform the Legislature about the overrun.

FIGURE 4

COMPARISON OF ACTUAL COST ESTIMATES TO ESTIMATES PROVIDED TO THE LEGISLATURE:
JUNE 1977 TO FEBRUARY 1979



*The estimated costs in December 1977 and August 1978 are listed here as \$23.0 million and \$23.9 million respectively. It is pointed out later in this report, however, that these figures understate total costs. In our opinion, it would have been more accurate to describe estimated project costs as about \$24.6 million and \$25.4 million at these times.

some it had agreed to in November 1977 as well. By late December 1978, DOC had restored \$4,478,000 of cuts made in August 1978, had added back about 24,000 square feet of industry space which had been added to the original plans but cut from the plans in November 1977, and had delayed the project for three to four months at a cost of about \$900,000 to \$1,200,000.

Currently, there is no legal requirement that DOA or the user agency report changes in the scope or the estimated cost of a building project to the Legislature. Since 1971, building appropriation laws have required DOA to submit the program and schematic plans for any building project to the chairmen of the House Appropriations and the Senate Finance Committees for their review and comment prior to preparing final plans and specifications. However, DOA is not legally bound to submit subsequent plans or cost estimates at design stages after schematics. In fact, DOA does not always submit a cost estimate with the schematic plans.

In order to ensure that the Legislature is informed about cost overruns and expansions of scope which occur on any future building projects, it is necessary to establish additional reporting requirements in statute or in building appropriation bills.

Recommendation: The Legislature should require the Department of Administration to report to the Legislature at any time that the department knows or has reason to believe that estimated project costs will exceed the funds appropriated. DOA should also be required to report any significant change in project size or scope which its consultant architects are directed to make to the plans which were submitted to the Legislature during appropriation hearings or during the required review of schematic plans.

In order to implement this recommendation, the Legislature will need to decide: (1) what projects these requirements should be applied to, (2) whether the requirements should be a permanent part of the statutes or be selectively included in building appropriation bills, and (3) whether the requirements should apply to projects for which the Legislature has appropriated planning funds but not construction funds.

In reviewing building projects other than the prison, we found that problems in controlling costs have not been confined exclusively to the largest building projects. Even some relatively small projects originally estimated to cost under \$1,000,000 have increased substantially in cost over their original appropriations. We also note that not all the projects which DOA has control over are included in the two major building bills which the Legislature usually passes. To ensure that some DOA projects are not overlooked, our recommendations, if implemented, should be incorporated into the statutes.

Recommendation: Chapter 16 of the Minnesota Statutes should be revised so that the above recommendations are

applied to all building projects which are supervised and controlled by the Department of Administration and which exceed \$400,000 in estimated costs.

The \$400,000 figure is also currently used to determine the projects for which the State Designer Selection Board must select a consultant to design projects for DOA.

In our opinion, similar requirements should be applied to projects for which planning funds have been appropriated. The prison was a planning project until funds were appropriated in May 1977.

Recommendation: On planning projects with an estimated construction cost in excess of \$400,000, the Legislature should require the Department of Administration to report the estimated cost and square footage at the completion of the schematic design stage. The Department should also be required to report any subsequent increases in estimated cost or size.

If these requirements had been in effect in 1977, DOA would have been required to report the estimates which placed the prison project \$3.1 million over budget in February 1977 and \$2.0 million over budget in April 1977.

The Legislature will also need to decide what legislative committee or committees DOA should report to. A number of DOA and DSBC managers have suggested that DOA report to a single joint committee as was done prior to 1973 when the Legislative Building Commission existed. One of their major concerns is that building projects could be delayed, and thus become even more costly, if the department must report to more than one legislative committee. The process of consulting with the Legislature could also be counterproductive if legislative committees provide the department with different directions.

We share the department's concern that legislative direction to the department be provided in an efficient and consistent manner and suggest that the Legislature give careful consideration to this issue. There is some evidence, however, that there is more than one way to accomplish these objectives. The Legislature could require DOA to report potential cost overruns to the chairmen of the House Appropriations and Senate Finance Committees as is now the case with schematic plans. On one recent major building project the chairmen and staff of the two committees were alerted to a potential cost overrun. The chairmen and staff of the two committees worked together and provided swift and consistent direction to DOA and the user agency involved in order to prevent a cost overrun.

¹Halenbeck Hall physical education facility, St. Cloud State University.

(3) The Cost Figures Provided to Certain Legislators in January 1978 and Late August 1978 Underestimated the Size of the Overrun by at Least \$1.5 Million.

DOC and DOA informed certain legislators of a \$1.4 million cost overrun in January 1978 and of a \$2 to \$3 million overrun in late August 1978. Both of these figures, however, underestimated the size of the overrun by as much as \$1.5 million.

The January 1978 estimate was inaccurate for three reasons. First, DOA failed to include the cost of space added to the plans after the construction manager began to estimate the project's construction costs. On November 16, 1977, DOC and DOA approved design changes prepared by the consultant architects which would reduce the size of the 338,000 square foot facility by about 47,100 square feet. DOA then asked its construction manager to prepare an estimate of construction costs based on the plans of November 16th. On November 22, 1977, however, DOC and DOA agreed to add back approximately 8,000 square feet to the November 16th plans for a staff corridor. Although DOA did not request the construction manager to incorporate the cost of the corridor in his cost estimate, DOA used his estimate as the basis for reporting a \$1.4 million cost overrun. If DOA had included the cost of the additional space, the overrun¹ would have been at least about \$160,000 higher than reported.

Second, DOA underestimated non-building costs by at least \$1,113,400. In estimating the \$1.4 million cost overrun, DOA included only \$1,174,000 for non-building costs--such as architectural design work, construction management, testing, and building permits and fees--and for change orders that might be needed during construction. Previously, however, DOA had set this figure at \$1,600,000. In addition, DOA was in the process of increasing architectural fees by \$120,400 over the previously anticipated amount because the project had increased in complexity and cost; and DOA planned to retain its construction manager for cost estimating and project administration services during construction at an estimated cost of at least \$567,000. If these additional costs had been added to the figure of \$1,600,000 which DOA originally established, then the allowance for non-building costs would have been² \$2,287,400--or \$1,113,400 more than the \$1,174,000 reported by DOA.

¹Although the architects estimated on November 22, 1977 that the 8,000 square foot corridor would cost \$160,000, the actual cost would have been greater because the corridor later included 12,000 to 13,000 square feet and probably would have cost \$30 to \$40 per square foot to build.

²The figure of \$1,174,000 used by DOA on January 26, 1978 was clearly unreasonable. It was already anticipated that architectural fees alone would cost at least \$1,163,500. Thus, only \$10,500 would be available for all other non-building costs and construction change orders. Furthermore, on January 27, 1978, DOA approved a supplement to the consultant architect's contract which increased architectural fees alone to \$1,283,900.

Third, the January 1978 estimate also underestimated the size of the overrun because the construction cost estimate was based on the assumption that all construction contracts could be awarded during 1978. Because the project was over budget and DOA and DOC intended to wait until the 1979 legislative session to request additional funding, it is likely that some construction work would have had to have been delayed until after the 1979 legislative session. As a result, DOA should have instructed its cost estimator to include the additional inflation of costs which would result from deferring some construction work until mid-1979. We estimate the cost of delaying part of the construction work to be about \$321,000.¹

In total, the January 1978 figure underestimated the size of the overrun by about \$1,594,000. Thus, the project was actually about \$3 million over budget instead of \$1.4 million as reported to the Legislature.

The August 1978 figure of a \$2 to \$3 million overrun underestimated the size of the overrun because the cost of certain essential construction work and fixed and built-in equipment and furnishings was not included in cost estimates. Included in the budget cuts made in August to reduce an \$11.9 million overrun to \$2 to \$3 million was a cut of \$1,071,980 of essential built-in or fixed equipment and furnishings from the construction budget. This change, however, did not really reduce costs because it was expected that these equipment and furnishing items would have to be funded from a future appropriation. The size of the overrun was therefore underestimated by \$1,071,980.

Because DOC had not yet decided what industries to include in the new prison, the architects designed the industry as unfinished space. By August 1978 it was assumed that the funds for finishing the industry space would have to come from a future appropriation. In order to accurately state the amount of the overrun, the estimated cost of finishing the industry space should have been added to the \$2 to \$3 million cost overrun figure. Although it cannot be determined what the estimated cost of finishing the industry space was in August 1978, the eventual cost was \$579,084, including architectural fees.

The specific problems with these cost estimates illustrate a number of more general problems with DOA's review of cost estimates provided by consultant architects and the reporting of these estimates to the Legislature:

- DOA's contract for design services requires its consultants to reduce project costs when they exceed the established budget. However, DOA has sometimes permitted its consultants to reduce project costs to within the budget by

¹Project costs would have been \$24,273,400, or \$2,673,400 over budget, if the additional non-building and corridor costs are added to DOA's estimate of \$23,000,000. The additional cost of delaying \$2,673,400 of construction for one year at 12 percent inflation is \$320,908.

removing essential items from the construction budget even though the items must later be funded from a future appropriation. Because DOA does not report these budget shifts to the Legislature when they are made, the Legislature does not receive accurate estimates of the size of cost overruns.

- DOA does not provide its consultants with direction on how to estimate costs when a project is over budget.
- DOA does not always verify the assumptions used by its consultants to estimate costs.

We recommend that DOA take the following steps to correct these problems:

Recommendation: DOA should revise its contract for design services to require its consultants to initially reduce project costs to within budget without cutting essential items which must later be funded. If DOA determines that it is cost effective to bid a project without certain essential items and to add these items later, DOA should inform the Legislature about the need for a future appropriation prior to taking bids.

Recommendation: When a project is over budget, DOA should instruct its consultants on when additional funds will become available and thus when it is likely that construction work will be bid. DOA should also review the consultants' estimates to ensure that the proper assumptions about bid dates are used in estimating project costs.

Recommendation: DOA should, in general, verify the major assumptions used by its consultants to develop a cost estimate. If the estimate indicates that the project is over budget and the estimate is then reported to the Legislature, DOA should also report any subsequent changes in project size or scope which affect the estimate.

Because consultants are not generally responsible for estimating non-building costs or setting aside a contingency for construction change orders, it is necessary for DOA to monitor these costs. On most building projects we reviewed, DOA has generally not had the problems which were experienced on the prison project. We found, however, that DSBC does not have a policy for its staff architects on how much money should be set aside as a contingency to fund change orders during construction. As a result, on some projects, no contingency was established.

Recommendation: DOA should establish a policy for its staff architects to follow in determining the contingency to set aside for change orders.

- b. The Executive Branch Began Partial Construction of the Prison Even Though It Had Not Informed the 1977 Legislature That Construction Would Be "Fast-Track" and Had Not Kept the Legislature Informed About the Increase in Size and Cost of the Facility.

The prison project was unique because, for the first time, the Department of Administration decided to employ a construction manager and use "fast-track" construction. Fast-track construction is a process in which the construction of a building is begun before architectural design is completed and a final cost estimate prepared. Instead of bidding all the construction work at one time, the project is bid in stages. As a result, the building can be partially constructed before the owner has made final decisions affecting the scope and cost of the project. Theoretically, fast-track construction can reduce construction costs by permitting some of the construction to be bid earlier than would otherwise be the case. In an inflationary economy, early bidding enables the owner to take advantage of lower prices.

The use of fast-track construction can, however, pose problems, particularly on government construction projects. If executive branch agencies increase the scope of a project without legislative approval and begin construction of the enlarged facility, it becomes difficult and costly for a legislative body to scale the project back down to its original size. The additional costs due to enlargement of the project's scope may more than offset any savings that early bidding can produce. The success of fast-track construction thus depends on whether executive branch agencies can: (1) resist the temptation to increase project size or scope, and (2) keep the legislative body informed about increases in project scope and cost in a timely and accurate manner.

On the prison project, fast-track construction was not successful because DOA and DOC permitted the size and cost of the project to increase and did not keep the Legislature accurately informed about the increases. In particular, we found:

- DOA did not inform the 1977 Legislature that fast-track construction would be used on the prison project, even though DOA was planning as early as the fall of 1976 to use fast-track construction.
- DOA permitted the first construction contract to be bid in September 1977 even though the project was at least \$2.8 million over budget, and awarded the contract in October 1977 even though the project was \$3.8 million over budget and had grown by 41 percent over its original size. Neither DOA nor DOC informed the Legislature about the increase in size and cost prior to awarding the contract.

¹The first time that DOA informed the Legislature that construction would be fast-tracked was apparently January 26, 1978, when the State Architect so informed a House subcommittee. There is no record of when DOA informed the Senate, if at all.

- After the overrun grew to \$11.9 million in June 1978, DOA and DOC revised their plans, thereby reducing the overrun to about \$8.4 million. DOA permitted contracts for reinforcing steel and site utilities to be bid in July 1978 even though the Legislature had not been informed of the \$8.4 million overrun.
- In late July 1978, the Governor's Office informed the agencies that an \$8.4 million overrun was unacceptable to the Governor unless it had broad, bipartisan support within the Legislature. As a result, further budget cuts were made in early August 1978 and the overrun was reduced to an estimated \$2 to \$3 million. After the cuts were made, DOA, DOC, and the Governor's Office permitted the contract for the concrete structural work to be bid. Some legislators were informed in late August or early September of the \$2 to \$3 million overrun. However, as we pointed out earlier, the overrun was actually about \$3.5 to \$4.5 million.
- Soon after the cuts were agreed to and the concrete contract went out for bids, DOC began to reconsider many of the cuts made in early August 1978. By September 9, 1978, DOC had reinstated previous cuts of \$1,168,450. By September 27, 1978, when it was decided that the concrete contract would be awarded, DOA had reinstated previous cuts of \$380,000. The Legislature was apparently not informed about the restoration of the cuts before the concrete contract was awarded. We estimate that the project was about \$5.3 million over budget when the contract was awarded.
- From September through late December 1978, the project was delayed while DOC studied whether other cuts made in August 1978 should be restored. By late December, DOC restored another \$4,478,000 of the cuts made in August 1978, added about 24,500 square feet of industry space (most of which had been added to the original plans but cut from the plans in November 1977), and delayed the project for three to four months at a cost of about \$900,000 to \$1,200,000. As a result, by February 1979, the cost overrun grew to more than \$12 million.

Thus, in order to obtain the Governor's approval to bid the concrete work, DOC and DOA had to make a large cut in the project's scope and costs. However, soon after the concrete contract went out to bid, DOC began to reconsider the cuts and eventually restored many of them. Although the construction manager estimates that early bidding saved the state about \$816,000 on the project, the additional costs added when these cuts were restored greatly offset the savings from fast-track construction. In fact, the three to four month delay during which DOC reconsidered the cuts cost the state more than early bidding saved.

Existing statutes apparently do not prevent the executive branch from beginning construction work on a project even though the project's cost is estimated to exceed available funds. Current law prohibits the Commissioner of Administration from adopting an architectural plan that contemplates the expenditure for its completion of more money than has been appropriated, unless otherwise provided in the appropriation act.¹ Both the former commissioner and an attorney providing legal advice to DOA maintain that this statute was not violated on the prison project. They argue that, even though DOA had committed the state to the expenditure of about \$8.3 million, other elements of the project could have been modified or eliminated in order to keep costs within the appropriated funds of \$21.6 million without wasting the concrete and other construction work already under contract.

Although DOA may not have technically violated this statute, neither DOA or DOC presented the Legislature with a specific plan which could have reduced the project's scope so that the project could be completed within appropriated funds. On the contrary, DOA permitted DOC to delay the project from September through December 1978 and to restore many of the previous budget cuts. By the time the Legislature was informed of the full extent of the cost overrun in March 1979, it was quite unlikely that the project could be completed within budget without wasting some of the construction work already under contract.

In order to restrict DOA's use of fast-track construction in the future, it is necessary to amend existing statutory language.

Recommendation: The Legislature should prohibit the Department of Administration from using "fast-track" construction, unless specific authorization is given for a project by an appropriation bill.

C. MANAGEMENT OF PROJECT COSTS

Another factor which contributed to the cost overrun was the manner in which DOA's Division of State Building Construction managed the project. DOA has a general statutory responsibility to see that building projects are completed within appropriated funds. However, DSBC's general policy concerning user agency requests to add space to the original plans and DSBC's methods for implementing its statutory responsibility severely constrain the executive branch's ability to complete projects within budget.

DSBC's general policy is to not interfere in the programming decisions of the user agency. In other words, if a state agency wants to add space to previously approved building plans, DSBC will not insist that the agency cut other components of the project to

¹Minn. Stat. §16.32, subd. 1 (1980).

remain within budget. DSBC may ask its consultant to suggest ways in which the project's costs can be reduced. However, if the user agency rejects the suggested cuts, DSBC permits the project to continue even though it is over budget.

DSBC is also generally supportive of the user agency's decisions when the agency requests additional funding from the Legislature. DSBC does not generally report to the Legislature options which would permit the project to be completed within appropriated funds.

In implementing its statutory responsibility, DSBC's general procedure is to review the project's cost only when cost estimates are prepared at the end of the various design stages. If decisions affecting project scope or cost are made by the user agency during a design stage, DOA may not respond to these changes until the architects complete that design stage and submit a cost estimate.

These general policies and procedures prevented the state from constructing and equipping a new prison for less than \$33.6 million. They affected costs in three ways:

- DOA permitted DOC to add space to the facility even though the project already had budget problems.
- DOA permitted DOC and the consultant architects to ultimately determine the scope, and thus the cost, of the project. DOA did not inform the Legislature in a timely manner about options that would reduce total project costs.
- Because DOA intervened only at the end of design stages when cost estimates were prepared, it took longer to complete design work than was originally planned. Project costs increased substantially because of these time delays.

These findings are discussed below.

1. DOA PERMITTED DOC TO ADD SPACE TO THE FACILITY EVEN THOUGH THE PROJECT ALREADY HAD BUDGET PROBLEMS.

The components of the Master Plan presented to the Legislature in 1977 were developed by 16 task forces consisting of approximately 70 DOC employees. Each task force was responsible for developing a program for a particular component of the prison. The task forces generally developed their components without specific consideration of costs. Only two of the groups stated that limitations on their "ideal" programs were acceptable. As a result, the prison proposed in the Master Plan was already in many respects an "ideal" facility from DOC's perspective. In fact, the primary designer of the prison told us that the program in the Master Plan represented an "idealization of every unit's fantasy ideals."

Despite this fact, DSBC not only failed to ensure that this facility was scaled down to the more affordable budget set by the Legislature, but permitted DOC to add space to the facility. Furthermore, DSBC permitted DOC to add space when the project already had budget problems. As we pointed out earlier, the project already had budget problems in February 1977 when the Master Plan was presented to the Legislature. At that point, the problems were largely due to the inadequacy of the consultants' earlier estimates of the amount of circulation and other non-assignable space necessary to accomplish DOC's objectives for the facility.

However, between February and September 1977, the budget problems worsened because the facility grew from 272,000 square feet to 338,000 square feet. Although a small portion of the increase can be attributed to the requirement that the medical facility meet Minnesota Department of Health standards, most of the increase resulted because DOC directed the architects to redesign and enlarge certain areas of the facility. For example, DOC directed the architects to add more space for industry, in part to expand the industry program to serve 200 inmates rather than 75 to 150 inmates as proposed in the Master Plan. As a result, industry space more than doubled. In May 1977, DOC directed the architects to redesign the administration building. As a result, additional space was provided in the visiting areas and in the lobby and stairway.

Some cuts were made in the fall of 1977 and in the summer of 1978 to control costs. However, the eventual size of the facility (330,000 square feet) was not much different from the 338,000 square feet which were on the plans before any cuts were made.

2. DOA PERMITTED DOC TO ULTIMATELY DETERMINE THE SCOPE, AND THUS THE COST, OF THE PROJECT. DOA DID NOT INFORM THE LEGISLATURE IN A TIMELY MANNER ABOUT OPTIONS THAT WOULD REDUCE COSTS.

By the end of 1978, DOC decided to restore most of the cuts which it had previously approved. After receiving a final cost estimate from the construction manager, DOC and DOA officials informed the Commissioner of Finance on February 27, 1979 that an additional \$10.2 million was needed to complete the construction of the prison in order to "make sure it satisfies the minimum program and security requirements for a high security facility without compromising on quality." In addition, the 1979 Legislature was told in the capital budget that cutting of the project's scope would not provide a "viable" facility.

There were, however, a number of options available which could have been used to reduce costs. For example, about \$0.7 million could have been saved if one of the four industry complexes

¹Proposed Capital Budget Detail Section: Fiscal Years 1980 and 1981, p. H-1.

had been omitted or \$1.4 million if two of the four had been omitted.¹ The two remaining industry complexes plus industry storage space in the core building would have still provided DOC with more net square footage than DOC requested in the 1977 Master Plan.

In part, the justification given by DOC for the increase in industry space was that the program was being enlarged to serve 200 inmates instead of the 75 to 150 inmates mentioned in the Master Plan. It is questionable, however, that DOC will be able to get more than 150 inmates involved in the prison industries.

According to the DOC project director, only about 200 of the total 400 inmates will even be available to work in the prison industries. Approximately 52 inmates will be in a restricted status (maximum security) and will not be allowed to work in the industries. About 52 inmates, with minimum to medium security classifications, will be assigned to institution maintenance as a work task. Up to 42 inmates will be in the medical facility and may not be available for work. In addition, some inmates will be involved in educational activities on a full-time basis and others will be involved in hearings and other activities. Furthermore, it seems rather optimistic to assume that all of the 200 available inmates would work in the prison industries. First, some inmates will simply choose not to work. Second, of the inmate population which is likely to be sent to the new prison, only a small percentage are currently working in an industry program at another institution.

DOC's current plans appear to confirm these conclusions. DOC is planning to put industry in only three of the four complexes planned for industry. Industry officials now project that only about 150 inmates will be available for industry. DOC² officials are considering other uses for the fourth industry complex.

In addition to the savings from not constructing as much industry space, the former Commissioners of Administration and Corrections and the primary designer stated to us that some of the cuts made in August 1978 could have been used to reduce the size of the cost overrun. It is debatable whether these additional cuts would have been desirable.

In our opinion, the Legislature cannot possibly make appropriate cuts without the assistance and advice of DOA's staff architects. In addition, that advice must come in a timely manner. In the

¹The estimated cost of a typical industry complex was provided by the local consultant architects and verified by the construction manager.

²After reviewing an earlier draft of our report, the current Commissioner of Corrections stated that he would like to see industry in all four complexes. We recommend that the last complex not be developed for industry unless it is demonstrated after the opening of the prison that a sufficient number of inmates wish to work in prison industries.

case of the prison, DOA did not offer suggestions to the Legislature during 1977, and possibly 1978, when the basic footprint or size of the prison could have been scaled down. By 1979, it would have been difficult, and to some extent counterproductive because of possible delays, to scale down the overall size of the project, other than by omitting an entire complex.

3. BECAUSE DOA ONLY INTERVENED AT THE END OF DESIGN STAGES WHEN COST ESTIMATES WERE PREPARED, IT TOOK LONGER TO COMPLETE DESIGN WORK THAN WAS ORIGINALLY PLANNED. PROJECT COSTS INCREASED SUBSTANTIALLY BECAUSE OF THESE TIME DELAYS.

In early March 1977, DSBC had approved schematic plans which showed the prison to be about 272,000 square feet. Because cost estimates still showed the project to be over budget, the State Architect directed the consultant architects to take steps to reduce the cost. DSBC did not, however, become involved in the project again until after the next design stage (design development) was completed and a cost estimate was prepared in late September 1977.

By not intervening between February and September, DSBC missed a valuable opportunity to keep the project's costs within or close to budget. At the end of the schematic design stage, the project was about one month behind schedule. However, by the time a design development cost estimate was completed in late September, the project was about four months behind schedule and had worse budget problems. Much of the delay can be attributed to the additional design work required by the Department of Corrections.

By the time DOC approved some cuts in the budget and DSBC directed the architects to proceed with the next stage of design (construction drawings), the project was nearly eight months behind schedule. In effect, the process of redesigning to meet DOC's demands for the facility and then redesigning to bring costs back down delayed the project by nearly seven months, thus adding about \$1.4 million to project costs.

DSBC received a warning that the architects had not reduced project costs to meet the budget when the construction manager estimated in late April 1977 that the project was \$2.0 million over budget and had grown to 300,000 square feet. Nonetheless, DSBC did not intervene then to bring the project's size and cost down and to minimize any further delays in the design process.

DOA also missed another opportunity to avoid delays and thus to keep project costs under control. After DOC approved budget cuts which reduced the cost overrun from \$11.9 million to about \$3.8 million in August 1978, DOC delayed the project while reconsidering the cuts. By not informing the Governor or the Legislature about the delay, DOA lost another three to four months of time. The delay cost the state an additional \$0.9 to \$1.2 million.

It should be emphasized that DOC was responsible for creating a good portion of the delays experienced on the project. DOC officials directed the consultant architects on a number of occasions to redesign the facility or add space without DSBC's prior knowledge. The directions given to the consultants clearly reflected a greater concern for achieving a perfect facility than for keeping project costs within budget. The DSBC staff architect stated that: "I'm sure it's typical of most projects where the agency people demand more and more space to arrive at the perfect solution to their operational needs."¹ Even the former Commissioner of Corrections stated in August 1978:

The architectural response to our program would result in probably the highest security facility ever built in the world. The response generally to the program has been excellent, but now the time has come to reduce the "ideal"² facility to that appropriate to our needs and pocketbook.

The project was also complicated by disagreements within DOC over the necessary level of security and by differences of opinion over how much the ideal program should be compromised in order to reduce costs. Because DOC reversed previous directions given to the consultant architects, the architects received an additional \$65,635 for redesign of the industry and kitchen areas and the locking system. The architects have also submitted additional claims for about \$155,000. So far, DOA has not approved or paid these additional claims.

4. RECOMMENDATIONS

The prison project was a unique project for DSBC in several respects. The project was the largest ever undertaken by DSBC. The proposed prison itself was quite unlike any that had been previously built. In addition, DSBC was working with a client (DOC) who had many more resources to devote to the project on a day-to-day basis than did DSBC.

We conclude, however, that DSBC could have better managed the project within its resources and could have prevented a portion of the cost overrun. DSBC's general policy of supporting the user agency's programming decisions and its practice of reviewing a project's cost only when cost estimates are prepared at the end of a design stage are responsible for a portion of the cost increase. We recommend that DSBC and DOA revise their general policy and practice as follows:

Recommendation: DSBC should require each user agency to submit a written request to DSBC if the agency wants the consultant architect to make major design changes after schematic drawings have been completed and approved.

¹DOA memorandum, October 19, 1977.

²DOC memorandum, August 3, 1978.

Recommendation: DSBC should revise its contract for design services to require consultants to have written approval from DSBC before making any changes which revise an approved plan or which will likely increase the construction cost above the approved construction budget.

Recommendation: If a user agency requests a change which will likely increase costs above the budget, DSBC should require the user agency and architects to reduce other components of the project in order to stay within budget.

It is our opinion that most budget problems can be resolved by DSBC, the user agency, and the consultants by following these procedures. If, however, these parties are unable to keep the project's scope and cost within the approved limits, it is necessary for the Legislature and the Governor to become involved.

Recommendation: If a user agency will not accept reductions and the project's cost exceeds its budget, DSBC should promptly report the budget overrun to the Legislature and the Governor.

Recommendation: In addition to reporting the potential overrun, DSBC should advise the Legislature and the Governor of the alternatives available for keeping the cost within appropriated funds. The user agency should be required to justify in writing its reasons for the proposed enlargement of project scope.

APPENDIX

LIST OF MAJOR PROJECT PARTICIPANTS

DEPARTMENT OF ADMINISTRATION

Commissioner: Richard Brubacher (Jan. 1970 to Nov. 1978)
State Architect: Paul Cummings
Staff Architect: Lyle Nelson

DEPARTMENT OF CORRECTIONS

Commissioner: Kenneth Schoen (Jan. 1973 to Dec. 1978)
Project Director: Bruce McManus
Project
Coordinator: James Zellmer

DESIGN TEAM

Prime Architects: Winsor/Faricy Architects, Inc.
St. Paul, Minnesota

Programmer and
Design Architects: Gruzen and Partners
New York, New York

Consulting
Engineers: Kirkham, Michael and Associates
Omaha, Nebraska and Minneapolis, Minnesota

Design Team's
Cost Estimator: Amis Construction and Consulting Services,
Inc.
New York, New York

OTHER CONSULTANTS

State's Cost
Estimator and
Construction
Manager: McGough Construction Company
Roseville, Minnesota

Liaison Architect: Architectural Systems, Inc.
Stillwater, Minnesota

STUDIES OF THE PROGRAM EVALUATION DIVISION

Final reports and staff papers from the following studies can be obtained from the Program Evaluation Division, 122 Veterans Service Building, Saint Paul, Minnesota 55155, 612/296-8315.

1977

1. Regulation and Control of Human Service Facilities
2. Minnesota Housing Finance Agency
3. Federal Aids Coordination

1978

4. Unemployment Compensation
5. State Board of Investment: Investment Performance
6. Department of Revenue: Assessment/Sales Ratio Studies
7. Department of Personnel

1979

8. State-sponsored Chemical Dependency Programs
9. Minnesota's Agricultural Commodities Promotion Councils
10. Liquor Control
11. Department of Public Service
12. Department of Economic Security, Preliminary Report
13. Nursing Home Rates
14. Department of Personnel, Follow-up Study

1980

15. Board of Electricity
16. Twin Cities Metropolitan Transit Commission
17. Information Services Bureau
18. Department of Economic Security
19. Statewide Bicycle Registration Program
20. State Arts Board: Individual Artists Grants Program

1981

21. Department of Human Rights
22. Hospital Regulation
23. Department of Public Welfare's Regulation of Residential Facilities for the Mentally Ill
24. State Designer Selection Board
25. Corporate Income Tax Processing
26. Computer Support for Tax Processing

27. State-sponsored Chemical Dependency Programs, Follow-up Study
28. Construction Cost Overrun at the Minnesota
Correctional Facility - Oak Park Heights

In Progress

29. Individual Income Tax Processing
30. Division of State Building Construction
31. Real Estate Management Division