

# 工程管理業務

Construction Management



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## 壹 「推動公共建設方案」列管公共建設計畫

為加速推動公共建設，提高預算執行率，本會研提94年度「推動公共建設方案」，按月列管追蹤1億元以上公共建設計畫之執行情形。具體推動措施及執行成效說明如下：

### 一、具體推動措施：

#### (一) 加強列管推動中之公共建設計畫

1. 建置「公共工程管理資訊系統」，供各工程主辦機關上網填報計畫執行情形，並按月檢討執行績效。
2. 「推動公共建設方案」列管1億元以上公共建設計畫共257項，94年度可支用預算數4,262億元。

#### (二) 建立推動機制

1. 各部會署成立「公共建設推動會報」，每月檢討計畫執行情形，及時解決執行困難問題。
2. 行政院成立「公共建設督導小組」，每月召開督導小組委員會議，檢討列管計畫執行績效。

#### (三) 困難問題之協調處理

1. 針對用地、土方、砂石、管線、環保及補助地方執行計畫等困難問題，分別由內政部成立用地及土方專案小組；經濟部成立砂石及管線專案小組；環保署成立環保專案小組；研考會成立補助地方執行計畫專案小組，協助協調解決相關困難問題。
2. 在處理的程序上，先由各部會署「公共建設推動會報」及時協調處理困難問題，以掌握時效；若仍無法解決，視問題性質由各相關專案小組協助解決；其他問題則提請行政院公共建設督導小組指派相關機關協助處理。並將處理結果提報行政院公共建設督導小組委員會議追蹤管制，以確實解決。

## I. Monitoring of Specific Public Construction Projects

To speed up the implementation of public construction projects and enhance the ratio of budget execution, the PCC formulated a Program for the Implementation of Public Construction Projects for 2005, calling for monthly monitoring of the progress of public construction projects budgeted at NT\$100 million or more. Concrete implementation measures and results are described below:

### 1. Concrete Implementation Measures

#### (1) Strengthened Implementation of Public Construction Projects

- a. A Public Construction Management Information System was established to facilitate the online reporting, by agencies in charge, of the progress of public construction projects, as well as the monthly review of the performance of implementation.
- b. A total of 257 projects budgeted at NT\$100 million or more each were monitored under the Program for the Implementation of Public Construction Projects. The total usable budget of those projects in 2005 was NT\$426.2 billion.

#### (2) Establishment of a Promotion Mechanism

- a. Each ministry and commission has established a Public Construction Promotion Committee to review the status of implementation each month and provide timely solutions to problems encountered in implementation.
- b. The Executive Yuan has set up a Public Construction Supervisory Committee, which meets monthly to review the implementation of monitored projects.

#### (3) Coordination for the Handling of Problems

- a. The Ministry of the Interior has established a land and soil committee, the Ministry of Economic Affairs has formed a gravel and conduit committee, the Environmental Protection Administration has set up an environmental protection committee, and the Research, Development and Evaluation Commission has established a committee for project implementation subsidies to local governments to help resolve problems encountered in the areas of land, soil, gravel, conduits, environmental protection, and subsidies to local governments.
- b. In terms of handling procedures, the Public Construction Promotion Committee first provides timely coordination for the resolution of problems. If no resolution is forthcoming, then the ad hoc committee of the ministry or commission handling the problem takes care of it in accordance with its characteristics. For other problems, the Executive Yuan's supervisory committee charges the relevant agency with disposition. The results of problem resolution are reported to the Executive Yuan's Public Construction Supervisory Committee for follow-up monitoring.





#### （四）訂定可支用預算分配指標

為避免預算過度集中於年底執行，影響人力調度及施工品質，各部會署辦理預算分配，應妥為釐定計畫實施進度，並按實施進度合理分配。

#### （五）提升預算執行

1. 為強化計畫項下工程標案之管理，本會定期將各部會署依政府採購法第61條填報於決標公告系統發包預算100萬元以上工程類標案資料轉入「工程標案管理」系統，提供各部會署公共建設推動會報督導追蹤各工程標案之執行進度以及品質查核等狀況，以提昇工程管理績效。
2. 工程推動如有困難問題導致進度落後，主辦機關應於本會「工程標案管理」系統填報落後原因、發生時點、建議解決層級、預估解決時間等項目，各部會署公共建設推動會報按月追蹤檢討，以發掘工程落後原因，並協助解決。
3. 加速各項計畫之估驗計價及付款行政作業，俾年底應付未付數占年度可支用預算數之比例降至5%以下為目標。
4. 補助型計畫辦理之工程，各部會署應依受補助單位執行能量及配合度加以審核，至遲應於94年2月底前核定，並限期完成發包，以利受補助單位有充足時間執行預算。對於無法於限期內完成發包之工程，應檢討調整或撤銷相關補助款。

#### （六）加強辦理品質查核

1. 各部會署「工程施工查核小組」依「工程施工查核小組作業辦法」規定，查核所屬機關（構）工程品質及進度等事宜，並對於重大落後或執行異常之工程，優先進行查核。
2. 中央工程施工查核小組查核各部會署「工程施工查核小組」作業情形或實地查核工程辦理情形，並依「工程施工查核小組績效考核作業要點」辦理查核小組年度績效考核成績評比相關事宜。





> 中正機場第二航站

#### (4) Setting of Usable Budget Allocation Indexes

To keep the implementation of budgets from being concentrated around the end of the year and thus affecting personnel assignments and the quality of construction, when the different ministries and commissions carry out the allocation of budgets they should delineate a proper implementation schedule and make reasonable allocations in accordance with the status of implementation.

#### (5) Enhancement of Budget Implementation

- a. To reinforce the management of bidding projects that come under major construction projects and to provide information on the progress and quality inspection results of bidding projects to the public construction promotion committees of the ministries and commissions, the PCC enters into the Construction Bid Management System, on a scheduled basis, all bidding projects with a budget of NT\$100 million or more that are reported in the bid gazette system by the different ministries and commissions in accordance with Article 61 of the Government Procurement Act.
- b. If problems are encountered that cause public construction projects to fall behind schedule, the agencies in charge should report the causes, times of occurrence, proposed resolutions, and estimated time needed for resolution on the PCC's Construction Bid Management System, with the public construction promotion committees of the different ministries and commissions following up with monthly reviews so as to find out the causes of the lag and help provide solutions.

- c. To speed up administrative price estimation and payment operations, the ratio of payment due at the end of the year to the overall usable budget for the year should be reduced to the target figure of 5% or lower.

- d. For construction work carried out under subsidized projects, the different ministries and commissions were required evaluate the implementation capability and degree of coordination of the subsidized organization, giving approval by the end of February 2005 at the latest and setting a deadline for the completion of bids so as to ensure that the subsidized organizations had enough time to implement the budgets. When construction contracts could not be awarded by the deadline, the projects were reviewed and readjusted or the subsidies withdrawn.

#### (6) Strengthened Implementation of Quality Surveillance

- a. The Public Construction Surveillance Units of the different ministries and commissions carry out surveillance of the quality and progress of construction by agencies under their jurisdiction in accordance with the Operating Rules for Construction Surveillance Units, with priority attention given to projects that have serious delays or abnormalities in implementation.
- b. The Central Surveillance Committee investigates the work of the Public Construction Surveillance Units of the different ministries and commissions or carries out on-site work inspections; and, in accordance with the provisions of the Performance Evaluation Guidelines for Public Construction Surveillance Units, carries out matters related to the annual surveillance performance ratings for the surveillance units.

#### （七）擴大全民監督

1. 計畫所屬施工標案應依「工程告示牌及竣工銘牌設置要點」規定設置工程告示牌，並載明全民督工通報電話（0800-009-609）及網路通報網址（<http://www.pcc.gov.tw>）。另列入各部會署工程施工查核小組查核項目。
2. 民眾通報案件之處理及改善追蹤，依「全民監督公共工程實施方案」規定辦理；並由本會依「全民監督公共工程實施方案考核作業規定」納入考核。

### 二、執行成效

- （一）按月彙整分析「推動公共建設方案」執行情形，檢討各機關之預算執行績效及品質查核結果，提行政院「公共建設督導小組」委員會議檢討，並按季提行政院院會報告。
- （二）有關「推動公共建設方案」之1億元以上公共建設計畫，截至94年12月底，執行數3,844億元，執行率為90.20%。
- （三）累計至12月底，各部會署工程施工查核小組查核573件；本會查核56件，共查核629件。

## 貳 推動公共工程品質躍升方案

### 一、制度面：

94年3月修正函頒「工程施工查核小組績效考核作業要點」及「工程告示牌及竣工銘牌設置要點」；94年6月修正函頒「公共工程金質獎頒發作業要點」；94年9月函頒「工程施工查核小組不預先通知查核作業補充規定」及「工程施工查核小組處理查核缺失改善逾期案件補充規定」，俾利執行，以全面提升工程品質。

### 二、執行面：

#### （一）教育訓練

##### 1. 品質管理人員：

- （1）開辦「公共工程品質管理訓練班」112期，參訓人數4,278人。
- （2）辦理「公共工程品質管理人員回訓班」148期，參訓人數5,595人。
- （3）辦理完成公共工程品質管理訓練班與回訓班代訓機構平時考核作業，共計考核17個培訓單位，計29個班次。
3. 辦理「94年度BOT模式之工程進度及品質管理訓練班」3期，共計151人參訓；辦理「94年度營建工程管理訓練班(一)」4期，共計214人參訓；「94年度營建工程管理訓練班(二)」2期，共計164人參訓；「公共工程監工人員基礎訓練班」2期，共計154人參訓。
4. 針對非工程專責單位人員，辦理「提升公有建築物工程品質訓練班(教育部專班)」3期，共計254人參訓。



> 72號東西向快速公路汶水橋



#### (7) Expanded Supervision by the Public

- a. Construction bidding projects that come under major public construction projects should, in accordance with the Rules for the Installation of Construction Signage and Completion Plaques, have signs giving the telephone number for supervision reporting by the public (0800-009-609) as well as the reporting website (<http://www.pcc.gov.tw>). This should be included among the items for surveillance by the Public Construction Surveillance Units of the ministries and commissions.
- b. The handling of cases reported by the public, and follow-up on improvement, are carried out in accordance with the provisions of Public Oversight Program in Public Construction, and are taken under evaluation by the PCC in accordance with the Rules for Evaluation of Public Oversight Program in Public Construction.

## 2. Results of Implementation

- (1) Collation and analysis for the implementation of the Program for the Promotion of Public Construction are carried out, and the budget execution performance of government agencies as well as the results of quality surveillance are reviewed, on a monthly basis. The results are reported to the Public Construction Surveillance Committee of the Executive Yuan for review, and quarterly reports are submitted to the full Executive Yuan.



- (2) By the end of December 2005, public construction projects with a budget of NT\$100 million or more that were covered under the Program for the Promotion of Public Construction had utilized total allocations of NT\$384.4 billion, for an implementation ratio of 90.20%.
- (3) By the end of December the Public Construction Surveillance Units of the ministries and commissions had carried out 573 cases of surveillance and the PCC itself had carried out 56 cases, for a total of 629 surveillance cases.

## II. Implementation of Quality Management Program in Public Construction

### 1. On the Systemic Level

In March of 2005 the PCC completed and promulgated revisions of the Performance Evaluation Guidelines for Public Construction Surveillance Units and Rules for the Installation of Construction Signage and Completion Plaques; a revision of the Operating Guidelines for the Awarding of Public Construction Golden Quality Awards was completed and promulgated in June of 2005; and Supplementary Rules for Surveillance Operations by Public Construction Surveillance Units Without Prior Notification, and Supplementary Rules for the Handling of Overdue Improvements of Deficiencies Discovered During Surveillance by Public Construction Surveillance Units, were promulgated in September of 2005 with the aim of achieving a general improvement in construction quality.

### 2. On the Implementation Level

- (1) Education and Training
  - a. Quality managers
    - (a) A total of 112 Public Construction Quality Management courses were held, with 4,278 trainees participating.
    - (b) A total of 148 Retraining Courses for Quality Managers were held, with 5,595 participants.
    - (c) Normal evaluations were carried out for 20 training courses at 17 training institutions that were commissioned to provide public construction quality management training and retraining.
  - b. Three 2005 BOT Model Construction Progress and Quality Management Training Courses were held, with a total of 151 personnel participating: four 2005 Construction Management Training Courses (1) were held, with 214 participants; two 2005 Construction Management Training Courses (2) were held, with 164 participants; and two Basic Training Courses for Construction Monitors were held, with 154 participants.



> 台灣高鐵700T型列車

## （二）品質查核

1. 本會辦理完成工程品質查核，屬「1億元以上列管計畫」者56件；屬地方工程者79件，合計135件。
2. 除本會辦理查核外，全國其他52個工程施工查核小組包括27個中央部會署及25直轄市、縣(市)政府，亦依「工程施工查核小組作業辦法」加強辦理查核。
3. 辦理第六屆公共工程金質獎之品質優良工程複評，計20件。
4. 建立94年度工程施工查核小組查核委員資料庫並辦理講習，計4場次。另建立查核委員網路交流園區，從95年度起，查核委員改上網交流及講習。
5. 辦理52個工程主管機關工程施工查核小組之績效考核(含書面審查、實地查證及複評作業)，包含27個中央部會署及25直轄市、縣(市)政府。
6. 建置「全民監督公共工程網路通報系統」，94年度通報案件計2,485件，已處理結案2,452件，另有33件持續追蹤中。

## （三）推廣觀摩

1. 辦理4場次「公共工程施工品質研討會及觀摩會」，計360人參加。
2. 委外拍攝「瀝青混凝土施工篇宣導片」，推廣正確施工品質方法。

## （四）考核獎懲

1. 加強品質查核管考機制，定期彙整各機關工程施工查核小組工程查核辦理情形報院。

- c. Three Training Courses for the Enhancement of Construction Quality in Public Structures were held for the personnel of units not exclusively in charge of construction, with 254 trainees participating.

#### (2) Quality Surveillance

- a. The PCC carried out construction quality surveillance of 56 monitored projects with budgets of NT\$100 million or more each and 79 local projects, for a total of 135 projects.
- b. In addition to surveillance carried out by the PCC itself, a total of 52 other Public Construction Surveillance Units throughout the country, including 27 from central government agencies and 25 from city and county governments, carried out strengthened surveillance works in accordance with the Operating Rules for Public Construction Surveillance Units.
- c. Reassessment of 20 cases was carried out for the 6th Public Construction Golden Quality Awards.
- d. A databank of Public Construction Surveillance Unit personnel for 2005 was established and four seminars were held for them. In addition, an online chat room was set up for surveillance personnel, and surveillance personnel exchange and seminar activities will be handled online beginning in 2006.
- e. Performance evaluations were carried out for the Public Construction Surveillance Units of 52 agencies in charge of construction (written examinations, on-site verifications, and reassessments), including 27 central government agencies and 25 county and city governments.
- f. An Internet Reporting System for Public Oversight in Public Construction was set up and 2,485 reports were submitted in 2005. Thirty-three ongoing cases were also followed up.

#### (3) Promotion and Observation

- a. Four Public Construction Quality Seminar and Observation Meetings were held, with a total of 360 persons participating.
- b. The production of an "Asphalt Concrete Operations" film was commissioned in order to extend proper operating quality methods.

#### (4) Evaluation, Rewards, and Sanctions

- a. The quality surveillance and control mechanism was strengthened, and reports on the operations of Construction Quality Surveillance Units of different

agencies were compiled and submitted to the Executive Yuan on a scheduled basis.

- b. The results of surveillance work were announced on a quarterly basis.
- c. The PCC carried out follow-up on 45 cases of persons responsible for inferior construction quality, as uncovered by surveillance. These included one case of partial demolition and reconstruction due to severe deficiencies; three cases of funds deducted, in accordance with contract provisions, from contractors or commissioned



> 計程車運將加入全民督工誓師大會



2. 每季公布查核結果。

3. 查核結果品質不良工程，追究相關人員責任計45件，含缺失嚴重部分拆除重作2件；依契約辦理承包商或委辦監造單位之扣款8件；對主辦機關人員懲處1件；檢討建築師、技師或專任工程人員責任案件3件；撤換工地負責人4人；撤換品管人員5人；撤換監造人員5人；撤換勞安人員2人；改善情形不良函請修正或補件者15件等。

4. 辦理第六屆公共工程金質獎頒獎活動，獎勵優良工程團隊，共計頒發品質優良獎，特優工程6件、優等工程3件及入圍2件；頒發品質查核績優獎，中央機關優等4名及地方機關優等3名；頒發個人貢獻獎，特優2名、優等2名及入圍3名。

5. 編印第五屆公共工程金質獎活動專輯，並分送相關機關。

### 參 推動全民監督公共工程實施方案

「全民監督公共工程實施方案」於91年7奉行政院核定，本會依據該方案督促各部會及縣市政府建置全民監督公共工程通報系統，各機關均已配合建立。

94年度民衆通報案件，計2,485件，其中2,452件已獲致解決，尚有33件持續辦理中。「全民監督公共工程實施方案」方案透過網際網路將有形的23個縣市政府、台北市及高雄市及30餘個中央部會虛擬為單一組織的公共工程民衆抱怨處理中心，諸如路不平、危害環境安寧等，可以在12個工作天內解決簡單的通報缺失；而較困難的案件也均透過定期的追蹤，達到一定的處理成效。本

方案推動過程，也建立一套道路工程管線遷移的協調機制，透過經濟部管線小組的居中協助，部分通報案件對於台電、自來水、中油及中華電信公司等管線作業均獲致快速的處理。

94年3月修正全民督工方案考核作業規定，對於績效優良的機關相關人員，最高有記功2次的獎勵；對於通報人通報之熱忱，也有表揚及頒發獎勵金最高五萬元的規定。94年上半年度辦理績效優良之主管機關有：優等為交通部、經濟部、台北縣政府及台北市政府，甲等為內政部及高雄縣政府。辦理績優之主辦機關則有台灣電力股份有限公司、交通部臺灣區國道新建工程局、交通部臺灣區國道高速公路局、臺北市政府、臺北縣政府、新竹市政府及台南縣政府，以及優良通報人17人。透過考核，本方案愈臻成熟，解決更多民衆對公共工程的不滿，提升民衆對公共工程品質的信賴程度。

另由相關案例顯示，以往民衆對於公共工程瑣碎事宜通報無門的情形，甚至跨機關協調之工程問題，在政府積極推動「全民監督公共工程實施方案」下，多數可獲得積極正面的回應。常常有民衆來電感謝我們在短時間內，將他們以往不知如何反映的工程問題處理完畢。在如此高效率之運作下，本方案確為民衆與政府間之溝通橋樑，並有效拉近了政府與民衆間之距離，頗獲民衆好評。

「全民監督公共工程實施方案」除持續辦理案件追蹤、考核、頒獎及對民衆頒發獎金外，並將結合工程施工查核小組績效考核機制，以加強本方案之落實。



> 第六屆公共工程金質獎



> 國道五號羅東收費站

construction monitoring units; one case of punishment of personnel from the agency in charge of construction; three cases of review of the responsibility of architects, engineers, or exclusively assigned construction personnel; four cases in which the responsible persons at construction sites were changed; five cases in which quality managers were changed; five cases in which construction monitors were changed; two cases in which worker safety personnel were changed; and 15 cases in which the revision or augmentation of documentation for the improvement of conditions was requested.

- d. The 6th Public Construction Golden Quality Awards were held to reward outstanding construction units. Six superior construction quality awards and three outstanding construction quality awards were presented, along with two honorable mentions. Four central government agencies and three local government agencies were granted outstanding quality surveillance awards, and two superior and two outstanding individual contribution awards (along with three honorable mentions) were presented.
- e. A 5th Public Construction Quality Awards booklet was published and distributed to related agencies.

### III. Implementation of Public Oversight Program in Public Construction

Public Oversight Program in Public Construction was approved by the Executive Yuan on July 17, 2002. Under this program, the PCC oversees the ministries, commissions, and city and county governments in their establishment of reporting systems for the public oversight of public construction. All of the agencies have now established such systems.

The public reported 2,485 cases in 2005, of which 2,452 have been resolved and 33 are still under disposition. The program operates through the formation, via the Internet, of a single virtual reality public complaint resolution center consisting of 23 county and city governments, the municipal governments of Taipei and Kaohsiung, and more than 30 central government ministries and commissions. Simple complaints involving problems such as unfair treatment and threats to environmental tranquility can be resolved within 12 working days, while more difficult cases are resolved through follow-up within a designated period of time. In the process of implementing this system, a coordination mechanism for the removal of ducts for road construction

was set up and, with the Economic Ministry's Duct Team serving as middleman, some of the reported cases involving duct operations by the Taiwan Power Co., water companies, the Chinese Petroleum Corp., and Chunghwa Telecom can be resolved quickly.

The evaluation rules of Public Oversight Program in Public Construction were revised in March of 2005 so that the personnel of agencies with outstanding performance can be awarded a maximum of two major merits and enthusiastic reporters can receive recognition as well as cash awards up to NT\$50,000. Agencies evaluated as having outstanding performance in the first half of 2005 were the Ministry of Transportation and Communications, Ministry of Economic Affairs, Taipei County Government, and Taipei City Government, while A-grade performance awards were granted to the Ministry of the Interior and the Kaohsiung County Government. Agencies awarded for superior performance in carrying out construction were the Taiwan Power Co., Taiwan Area National Expressway Engineering Bureau and Taiwan Area National Expressway Bureau of the Ministry of Transportation and Communications, Taipei City Government, Taipei County Government, Hsinchu City Government, and Tainan County Government, while 17 individuals were awarded for outstanding reporting. The program is becoming more mature through these evaluations and more matters that cause public dissatisfaction are being resolved, thereby strengthening the confidence of the public in the quality of public construction.

Relevant cases show that most of the public construction matters for which the public had no reporting channels in the past, and even construction problems involving cross-agency coordination, can now receive a positive response thanks to the government's vigorous implementation of Public Oversight Program in Public Construction. Members of the public frequently call the PCC to express gratitude for the handling of construction problems-which in the past the people would not have known how to pursue-within a short time. The highly efficient operation of this program makes it a true bridge for communication between the people and the government, effectively shortening the distance between the two and winning praise from the public.

Besides continuing with follow-up, evaluation, the presentation of awards, and the granting of cash bonuses to the public, Public Oversight Program in Public Construction will also work with the performance evaluation mechanism of the Construction Surveillance Units to strengthen its implementation.