

# 技術業務

## Technical Affairs

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### ■ 壹、加強公共工程計畫與經費審議

本會審議之作業主要係著重於工程技術妥適性與經費合理性，並配合工程進度提供相關審議意見及基於督導、協調立場協助工程主辦機關解決問題。

為增進公共工程計畫與經費有關技術及成本估算審議機制之效率，並落實電子化政府之目標，九十一年修訂「政府公共工程計畫與經費審議作業要點」，將可有效提昇審議作業之效率。本會依據審議作業要點之規定，審議九十二年度公共工程計畫以及非屬九十二年度預算之新興工程計畫，迄九十一年十二月止計六百九十二件，審議成果詳附表。未來將著重綜合規劃階段（約 30% 設計圖說與總工程經費概算）之覈實，並持續加強宣導推廣各工程主辦機關於編列工程預算時，確實依照作業要點之機制及「公共建設工程經費估算編列手冊」之相關工程作業要素及成本原則辦理，以發揮工程專業審議功能，達成預算支出與工程進度密切配合，進而有效發揮公共工程相關資源之最大效益。

### ■ 貳、促進民間參與公共建設

本會為「促進民間參與公共建設法」（以下簡稱促參法）之主管機關，負責民間參與公共建設政策與制度之研訂，以及各主辦機關相關業務之協調、督導及考核事宜等。

#### 一、執行成果

##### （一）促參列管案件統計

各主辦機關依促參法辦理之民間參與公共建設計畫，經本會九十一年十二月彙整，共計七十三件，計畫規模預估約三、七二二億元，民間投資額度約一、八九九億元。

### ■ I. Strengthening of Public Construction Planning and Spending Review

The review operations of the PCC are concentrated mainly on the suitability of construction technology and the reasonableness of expenditures, as well as on the offering of opinions in line with the progress of construction work and, from a supervisory and coordination standpoint, the provision of problem-solving assistance to agencies in charge of construction projects.

To improve the efficiency of the mechanism for review of technology and cost estimation for public construction projects and expenditures, and to achieve the goal of developing e-government, the Guidelines for the Review of Public Construction Plans and Budgets were revised in 2002 so as to enhance the efficiency of review operations. Based on the stipulations of the Guidelines, by the end of December 2002 the PCC had reviewed 692 public construction projects for fiscal year 2003 as well as new construction projects outside the 2003 budget. The results of the review work are shown in the accompanying tables. In the future, focus will be placed on examination of the general planning stage (approximately 30% of design chart and total construction spending) and guidance will continue to be strengthened for the agencies in charge of construction to compile their construction budgets in accordance with the mechanism provided in the Guidelines and with the construction operations factors and costing principles contained in the Handbook for Estimating Public Construction Expenditures so as to manifest the professional review function and achieve close coordination between budget expenditures and the progress of construction and, further, to achieve maximum effectiveness in the utilization of resources related to public construction.

### ■ II. Promotion of Private Participation in Infrastructure Projects

The PCC is the competent authority of the Law for the Promotion of Private Participation in Infrastructure Projects, and is responsible for the formulation of policies and framework related to private participation in infrastructure projects as well as for coordination, supervision, and evaluation of related operations by the authorities in charge.

#### 1. Results of Implementation

##### (1) Statistics on Monitored Private Participation Cases



## (二) 輔導代表性案件，以擴大實施

九十一年優先輔導案件共計十件，予以專案輔導推動，並遴選短期可成案、具擴大推動效益之示範案例四件，指派專人予以協助，俾利成功後提供執行經驗供後續案件辦理之參考。至十二月底止，已有台大尊賢館委託經營乙案順利完成簽約，另有桃園航空貨運園區建設計畫完成議約，預定九十二年二月簽約。

## (三) 強化整體推動架構

1. 促成中央各部會成立促參推動小組，多數部會已陸續成立由副首長擔任召集人之促參推動小組，評估主管公共設施開放民間參與之範圍、篩選民間參與推動計畫及訂定推動目標，並對通案性事項訂定實施規定。
2. 擴編「促進民間參與公共建設協調推動小組」之工作小組，邀集相關機關之土地取得、都市計畫、財務、法律等業務之科長級以上人員加入，目前由內政部營建署及地政司、財政部國產局、院經建會及本會法規會指派適當人員參加。原則上每月召開一次工作小組會議，針對共通性問題，加速整合各領域專業意見，以增進幕僚作業效率，強化推動小組對相關問題之協調解決功能。
3. 研擬各縣市辦理促參情形考核辦法，配合主計處「中央對各縣市政府九十一年度計畫及預算之考

The number of cases of private participation in infrastructure projects under the Law for the Promotion of Private Participation, as compiled by the PCC in December 2002, totaled 73. The total cost of these projects was estimated at approximately NT\$372.2 billion, with private investment amounting to about NT\$189.9 billion.

## (2) Guidance of Representative Cases to Achieve Expanded Implementation

A total of 10 cases were given priority guidance in 2002, and four demonstration cases with the characteristics of quick formation and the ability to expand the effectiveness of promotion were chosen out so that, following their success, the experience of their implementation could be provided for reference by later cases. By the end of December a contract commissioning management by the Leader Hotel Taipei of National Taiwan University had been signed; contract negotiations had also been completed for design planning of the Taoyuan Air Cargo Park, and the contract was expected to be signed in February 2003.

## (3) Reinforcement of the Overall Framework for Implementation

- a. Ministries and commissions at the central government level are encouraged to set up task forces for the promotion of private participation, and most of them have done so with their vice ministers or vice chairmen acting as convenors. These task forces assess the scope of opening to private participation by the agencies in charge of infrastructure projects, screen private participation promotion plans, set promotion targets, and establish general implementation regulations.
- b. The working group of the Coordinating Team for the Promotion of Private Participation in Infrastructure Projects has been enlarged, and representatives at the level of section chief or above from the land acquisition, urban planning, finance, and legal affairs units of the agencies in charge have been invited to join. Suitable representatives have already been designated by the Construction & Planning Administration and Land Administration Department of the Ministry of the Interior, the National Property Bureau of the Ministry of Finance, and the Committees of Laws and Regulations of the Council for Economic Planning and Development and the PCC. A working group meeting will, in principle, be called once a month to accelerate the integration of professional opinions from various fields in regard to common issues so as to improve the efficiency of staff operations and reinforce the coordination and resolution functions of the Coordinating Team.
- c. Auditing methods for the status of promotion of private-sector participation by the counties and cities have been formulated in



附表 本會九十一年審議非屬九十二年度公共工程計畫與經費成果彙整表

Results of Cost Review of New Public Construction Projects and Expenditures Outside the FY2003 Budget

計畫類型 Type of Project	件數 No. Pro- jects	總經費 Total Spending					年度經費 FY2003 Spending				
		函報總經費 Requested Budget	本會審議總 經費(仟元) 之總計 PCCPropose d Budget	總經費 (暫匡列) Total Budget	減列金額 Reduction	總經費核 列百分比 % of Budget Approved	函報年度 經費 ReQueste d Budget	本會審議年度 金額(仟元)之 總計 PCCPropose d Budget	本會建議 年度經費 Total Budget	緩列金額 ReDuction	年度經費 核列 百分比 % of Budget Approved
公共建設計畫 Infrastructure Projects	40	\$103,822,254	\$83,214,527	\$76,410,273	\$6,804,254	91.82%	-	-	-	-	-
延續 Continued	5	\$10,584,080	\$1,284,080	\$1,204,080	\$80,000	93.77%	-	-	-	-	-
新興 New											
可行性 Feasibility	17	\$67,758,921	\$57,882,114	\$53,204,894	\$4,677,220	91.92%	-	-	-	-	-
綜合規劃 General Plan	18	\$25,479,253	\$24,048,333	\$22,001,299	\$2,047,034	91.49%	-	-	-	-	-
重要社會發展計畫 Important Social Development Projects	1	\$352,707	\$352,707	\$352,707	\$0	100.00%	\$54,751	\$54,751	\$54,751	\$0	100.00%
延續 Continued	-	-	-	-	-	-	-	-	-	-	-
新興 New											
可行性 Feasibility	-	-	-	-	-	-	-	-	-	-	-
綜合規劃 General Plan	1	\$352,707	\$352,707	\$352,707	\$0	100.00%	\$54,751	\$54,751	\$54,751	\$0	100.00%
五千萬以上公物預算 Government Budgets over NT\$50 Million	120	\$41,284,439	\$36,818,105	\$35,406,509	\$1,411,596	96.17%	\$1,311,692	\$925,492	\$925,492	\$0	100.00%
延續 Continued	8	\$3,174,265	\$1,655,285	\$1,604,785	\$50,500	96.95%	\$6725,733	\$286,533	\$286,533	\$0	100.00%
新興 New											
可行性 Feasibility	25	\$7,334,481	\$6,767,121	\$6,386,592	\$380,529	94.38%	\$183,414	\$183,414	\$183,414	\$0	100.00%
綜合規劃 General Plan	87	\$30,775,693	\$28,395,699	\$27,415,132	\$980,567	96.55%	\$455,545	\$455,545	\$455,545	\$0	100.00%
非營業基金 NonBusiness Foundation Projects	3	\$354,252	\$328,136	\$328,136	\$0	100.00%	-	-	-	-	-
延續 Continued	-	-	-	-	-	-	-	-	-	-	-
新興 New											
可行性 Feasibility	2	\$133,382	\$107,266	\$107,266	\$0	100.00%	-	-	-	-	-
綜合規劃 General Plan	1	\$220,870	\$220,870	\$220,870	\$0	100.00%	-	-	-	-	-
軍事工程計畫 Military Engineering Projects	3	\$471,4098	\$471,4098	\$4,457,172	\$0	94.55%	\$66,870	\$66,870	\$66,870	\$0	100.00%
延續 Continued	-	-	-	-	-	-	-	-	-	-	-
新興 New											
可行性 Feasibility	-	-	-	-	-	-	-	-	-	-	-
綜合規劃 General Pla	3	\$4,714,098	\$4,714,098	\$4,457,172	\$0	94.55%	\$66,870	\$66,870	\$66,870	\$0	100.00%
災修工程 Disaster Recovery Projects	21	\$4,149,763	\$4,148,263	\$3,925,620	\$222,643	94.63%	-	-	-	-	-
延續 Continued	-	-	-	-	-	-	-	-	-	-	-
新興 New											
可行性 Feasibility	3	\$33,620	\$33,620	\$26,940	\$6,680	80.13%	-	-	-	-	-
綜合規劃 General Pla	18	\$4,116,143	\$4,114,643	\$3,898,680	\$215,963	94.75%	-	-	-	-	-
其他計畫 Other Projects	4	\$3,051,040	\$2,691,040	\$2,685,520	\$0	99.79%	-	-	-	-	-
延續 Continued	-	-	-	-	-	-	-	-	-	-	-
新興 New											
可行性 Feasibility	3	\$3,019,040	\$2,659,040	\$2,659,040	\$0	100.00%	-	-	-	-	-
綜合規劃 General Pla	1	\$32,000	\$32,000	\$26,480	\$5,520	82.75%	-	-	-	-	-
延續 Continued	13	\$13,758,345	\$2,939,365	\$2,808,865	\$130,500	95.56%	\$672,733	\$286,533	\$286,533	\$0	100.00%
新興 New											
可行性 Feasibility	50	\$78,279,444	\$67,449,161	\$62,384,732	\$5,064,429	92.49%	\$183,414	\$183,414	\$183,414	\$0	100.00%
綜合規劃 General Pla	129	\$65,690,764	\$61,878,350	\$58,372,340	\$3,249,084	94.33%	\$577,166	\$577,166	\$577,166	\$0	100.00%
合計 Total	192	\$157,728,553	\$132,266,876	\$123,565,937	\$8,444,013	93.42%	\$1,433,313	\$1,047,113	\$1,047,113	\$0	100.00%

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核作業」，訂定各縣市辦理促參情形考核辦法，並將考核成果函送主計處續辦，以作為行政院增減對各縣市基本設施補助經費之參據。

4. 舉辦「民間參與公共建設金擘獎」（原「民間參與公共建設貢獻卓越獎」），獎勵優秀創新之政府工作團隊及民間經營團隊（分別以「宏擘獎」及「福擘獎」命名），本獎評選須知業於四月三十日公告，並於六月十五日開放申請，申請案件皆提送評選委員會完成兩階段評選，並於十二月三十一舉辦頒獎典禮。
5. 建置支援機制：已編製民間參與公共建設之整體作業、先期規劃、財務評估及甄審作業手冊，提供主辦機關執行個案公告作業之參考。本年度因應主辦機關要求，編製可行性評估及先期計畫書作業手冊-委託民間營運案件（簡要版），並著手研訂民間參與公共建設投資契約標準模式、協商機制、融資與風險規劃。
6. 建立招商機制：擴充促參投資資訊平台，充實現有系統功能、建置促進民間參與公共建設英文網站及整合相關機關網站招商資源，以提高資訊流通速度，作為主辦機關與民間投資者資訊交流之橋樑。並將民間參與公共建設之相關法令介紹、租稅優惠措施及市場誘因說明等製作成冊，供對外宣廣之用。

#### （四）訂頒民間自行規劃案件審核注意事項

鑒於民間自行規劃參與公共建設案之適用態樣廣泛，主辦機關審核時常面臨商機及商業競爭之考量、公平性之維護、避免圖利他人質疑等問題，本會已於三月一日發布「主辦機關審核民間申請自行

line with the Directorate General of Budget, Accounting and Statistics' Regulations Governing Central Government Auditing of County and City Government Projects and Budgets for FY2002, and the results of the auditing work have been sent to DGBAS for follow-up and for use as a reference in increasing or reducing the Executive Yuan's infrastructure subsidies for counties and cities.

- d. The "Golden Thumb Awards for Private Participation in Infrastructure Projects" (originally called the "Outstanding Contribution Awards for Private Participation in Infrastructure Projects") were held to reward outstanding and innovative government and private-sector teams (with "Great Thumb Awards" and "Lucky Thumb Awards," respectively). Instructions for the selection of awardees were announced on Apr. 30 and applications for the awards were opened up on June 15; applications were sent to the selection committee for selection in two stages, and the awards ceremony was held on Dec. 31.
- e. A supporting mechanism is being set up; general operations for private participation in infrastructure projects have been worked out and a preliminary planning, financial assessment, and selection handbook has been completed and supplied to the agencies in charge for use as a reference in handling announcement of individual cases. Work completed this year to fill the needs of the agencies in charge of construction projects includes the production of an operations manual for feasibility studies and preliminary plans for operations commissioned to the private sector (simplified version); in addition, work was undertaken on the formulation of a standard investment contract, negotiating mechanism, and financing and risk planning for private participation in infrastructure projects.
- f. In the establishment of an investment promotion mechanism, the investment information platform for private participation has been expanded and the functions of the existing system have been augmented, an English-language website for private participation in infrastructure projects has been established, and the investment promotion resources of relevant agency websites have been integrated to increase the speed of information flow and allow the system to serve as a bridge for the interflow of information between the agencies in charge and private investors. In addition, pamphlets introducing laws and regulations related to private participation in infrastructure projects, and explaining tax preferences and market incentives, have been produced for publicity purposes.

#### (4) Promulgation of Guidelines for the Evaluation of Unsolicited Proposal



附表 本會九十一年審議九十二年度公共工程計畫與經費成果彙整表  
Results of Cost Review of FY2003 Public Construction Projects and Expenditures (by type of project)

計畫類型 Type of Project	件數 No. Pro- jects	總經費 Total Spending					年度經費 FY2003 Spending					
		函報總經費 Requested Budget	本會審議總 經費(仟元) 之總計 PCCPropose d Budget	總經費 (暫匡列) Total Budget	減列金額 Reduction	總經費核 列百分比 % of Budget Approved	函報年度 經費 ReQueste d Budget	本會審議年度 金額(仟元) 之總計 PCCPropose d Budget	本會建議 年度經費 Total Budget	緩列金額 ReDuction	年度經費 核列 百分比 % of Budget Approved	
公共建設計畫 Infrastructure Projects	合計 Total	270	96,404,538	96,268,538	91,111,273	5,157,265	94.64%	314,166,439	274,934,077	231,907,150	43,026,927	84.35%
	延緒 Continued	220	-	-	-	-	-	273,322,632	238,337,770	198,445,207	39,892,563	83.26%
	新興 New	50	96,404,538	96,268,538	91,111,273	5,157,265	94.64%	40,843,807	36,596,307	33,461,943	3,134,364	91.44%
重要社會發展計畫 Important Social Development Projects	合計 Total	25	124,477	124,477	124,477	-	100.00%	6,855,320	6,144,151	4,689,980	1,454,171	76.33%
	延緒 Continued	24	-	-	-	-	-	6,730,843	6,019,674	4,565,503	1,454,171	75.84%
	新興 New	1	124,477	124,477	124,477	0	100%	124,477	124,477	124,477	0	100%
五千萬以上公物預算 Government Budgets over NT\$50 Million	合計 Total	80	8,519,878	8,167,027	8,146,333	20,694	99.75%	21,279,104	20,944,181	18,073,924	2,870,257	86.30%
	延緒 Continued	56	-	-	-	-	-	19,157,331	18,822,408	16,015,618	2,806,790	85.09%
	新興 New	24	8,519,878	8,167,027	8,146,333	20,694	99.75%	2,121,773	2,121,773	2,058,306	63,467	97.01%
非營業基金 NonBusiness Foundation Projects	合計 Total	13	78,966	78,966	72,000	6,966	91.18%	1,024,373	950,573	929,207	21,366	97.75%
	延緒 Continued	9	-	-	-	-	-	834,043	760,243	740,243	20,000	97.4%
	新興 New	4	78,966	78,966	72,000	6,966	91.18%	190,330	190,330	188,964	1,366	99.28%
軍事工程計畫 Military Engineering Projects	合計 Total	26	2,655,193	2,655,193	2,389,696	265,497	90.00%	6,014,003	6,009,092	5,937,728	71,364	98.81%
	延緒 Continued	21	-	-	-	-	-	5,951,231	5,946,320	5,870,891	75,429	98.73%
	新興 New	5	2,655,193	2,655,193	2,389,696	265,497	90%	62,772	62,772	66,837	-4,065	106.48%
國營事業	合計 Total	86	19,607,115	18,523,340	18,253,996	269,344	98.55%	80,918,850	77,163,008	72,485,674	4,677,334	93.94%
	延緒 Continued	58	-	-	-	-	-	76,135,603	70,962,616	68,373,432	2,589,184	96.35%
	新興 New	28	19,607,115	18,523,340	18,253,996	269,344	98.55%	4,783,247	6,200,392	4,112,242	2,088,150	66.32%
合計 Total	合計 Total	500	127,390,167	125,817,541	120,097,775	5,719,766	95.45%	430,258,089	386,145,082	334,023,663	52,121,419	86.50%
	延緒 Continued	388	-	-	-	-	-	382,131,683	340,849,031	294,010,894	46,838,137	86.26%
	新興 New	112	127,390,167	125,817,541	120,097,775	5,719,766	95.45%	48,126,406	45,296,051	40,012,769	5,283,282	88.34%

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規劃參與公共建設案件注意事項」，作為主辦機關審核民間申請自行規劃案之審核原則及辦理依據。

#### (五) 持續辦理推廣訓練，提昇執行共識與執行能力

於九十一年四月辦理「主辦機關審核民間自行規劃申請參與公共建設案件注意事項」訓練事宜，並於七月舉辦兩期「委託民間經營公共建設訓練班」，邀請主辦機關業務承辦人員共一百四十人參加。另協助各部會及縣市政府辦理教育訓練，介紹相關專業知識，以建立共識及提升專業能力。

### 二、未來執行重點

- (一) 依行政院指示籌組「促進民間參與公共建設推動委員會」，由副院長召集，以加強推動民間參與公共建設。
- (二) 配合「挑戰二〇〇八國家發展重點計畫」，擴大各部會主管公共設施開放民間參與範圍。
- (三) 持續辦理促進民間參與公共建設專業人才培訓活動，提升業務相關人員之專業能力。

## 參、推動綠營建及生態工法

### 一、推動綠營建及生態工法

隨著時代的進步，對於自然環境保育及親近大自然之需求意識提高。「生態工法」及「綠營建」便扮演了一個重要角色。

本會從教育、考試及專業人才培育等三方面著手，九十一



冬山河親水公園

Since the scope of applicability of the private sector's own planning of projects for private participation in infrastructure projects is very broad, in examining these cases the agencies in charge frequently encounter considerations of commercial opportunity and business competition as well as such issues as the maintenance of fairness and the avoidance of suspicion of conferring illegal benefits on others. On Mar. 1 the PCC promulgated "Guidelines for Evaluation of Unsolicited Proposals by the Arranging Authority" for the agencies in charge to use as a basis when evaluating applications for self-planning by the private sector.

#### (5) Continued Extension Training to Strengthen the Consensus for and Capability of Implementation

Training for the "Guidelines for Evaluation of Unsolicited Proposals by the Arranging Authority" was held in April 2002, and two "Training Courses for Commissioning of the Private Sector to Operate Infrastructure Facilities" were held in July. A total of 140 persons responsible for related operations in the agencies in charge of infrastructure projects were invited to participate. The various ministries and commissions, as well as county and city governments, were also provided assistance in conducting training courses to introduce relevant professional know-how so as to establish a consensus and enhance professional abilities.

### 2. Focus of Future Implementation

- (1) A Committee for the Promotion of Private Participation in Infrastructure Projects, with the vice premier serving as convener, will be organized in accordance with instructions from the Executive Yuan so as to strengthen the promotion of private participation.
- (2) The scope of infrastructure projects under the various ministries and commissions that are opened to private participation will be expanded in line with the "Challenge 2008 - National Development Plan."
- (3) The training of professionals for private participation in infrastructure projects will be continued so as to enhance the professional abilities of personnel involved in related operations.

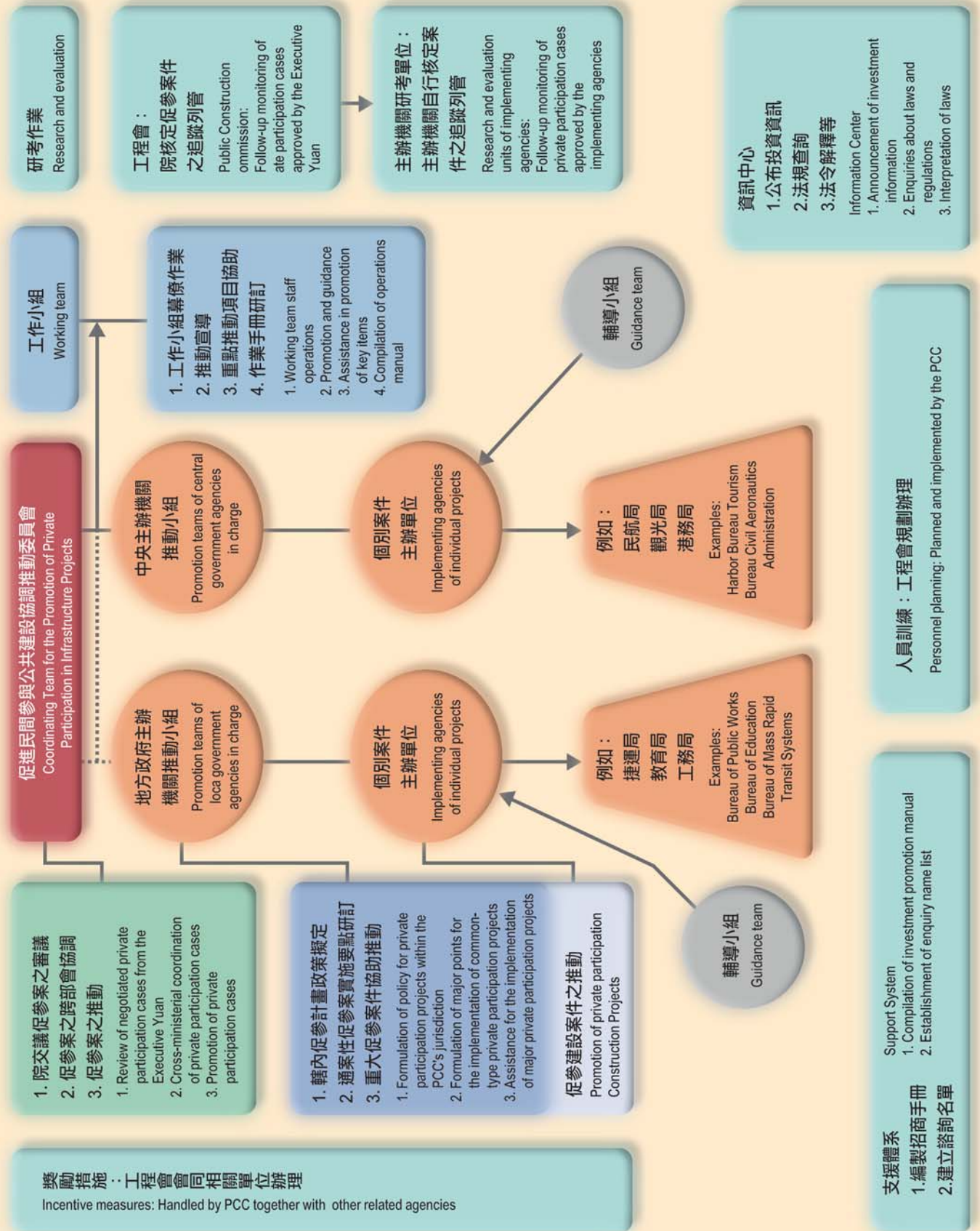
## III. Promotion of Green Construction and Eco-technology Methods

### 1. Promotion of Green Construction and Eco-technology Methods

A consciousness of the need to preserve the natural environment and to get close to nature has strengthened with the advance of time, and green construction and eco-technology methods have

圖一 促進民間參與公共建設推動機制

Chart 1 Mechanism for Promotion of Private Participation in Infrastructure Projects





年度已分別輔導各大專院校開設生態工法課程、完成一〇〇位生態工法種子教師之培訓及協調考選部將生態工法納入有關科目高普考試題，並攝製宣導片及光碟輔導內政部、交通部、農委會、經濟部及縣市政府成立生態工法推動小組；建立生態工法基本圖及相關公共工程施工綱要規範及營建物價，俾使綠營建及生態工法在解決國內生態環境及資源有效利用上，發揮最大效益，並達到災害防止與環境保育之目的。

## 二、公共工程資源再利用

推動公共工程使用再生資源工作實屬長期性、持續性業務，目前辦理成果及後續推動作業情形如下：

- (一) 修訂頒布「各機關辦理瀝青混凝土再生利用作業要點」，另辦理第九十一年度第一、第二梯次熱拌再生瀝青混凝土廠審查認可作業。
- (二) 分別於北部、中部及南部各辦一場「各工程主辦機關人員再生瀝青混凝土實務講習會」(參加人次共約五百人)。
- (三) 推動「廢玻璃容器再利用於公共工程」，進行較長路段廢玻璃砂瀝青道路再利用試鋪工作。

## 肆、整合公共工程技術資料庫

### 一、劃一及整編公共工程施工綱要規範及工程項目編碼

完成公共工程施工綱要規範(完整版)682章、(精簡版)342章及工程細目編碼規則表524章之增修，供工程界參採應用。

### 二、建構公共工程工料價格資料庫與調查機制

在「營建物價」雜誌內加入各工程主辦機關提送之歷史標案，以資訊化之方式加以處理，建立價格資料庫，作為各機關編列預算及核定底價之參考，並落實「統一發包與集中採購中心」計畫底價審議之政策目標以及業界編列設計預算與投標等。

### 三、推廣預算「公共工程經費估價電腦系統」

建置網際網路估價系統，並辦理上線輔導推廣研習班，俾使成果推廣至各工程主辦機關，以期達到經費編列及審查自動化，提升工作效率，並依據學員意見開發可供網路使用之新版本程式。

### 四、推廣「基層公共工程基本圖彙編」

為落實行政院永續經營之政策目標以及新法令之公布，本



蘭潭隧道

come to play important roles.

The PCC works to fill this need from three aspects: education, testing, and the training of professionals. The PCC provided help to colleges and universities in setting up eco-technology courses in 2002, completed the training of 100 seed instructors in eco-technology methods, and negotiated with the Ministry of Examination for inclusion of eco-technology as a test topic in the related subjects of the junior and senior civil service examinations. In addition, training films and CDs were produced to help the Ministry of the Interior, Ministry of Transportation and Communications, Council of Agriculture, Ministry of Economic Affairs, and county and city governments set up promotion teams for eco-technology methods. Eco-technology basic charts were established, along with outline criteria and construction prices related to the implementation of public construction so that green construction and eco-technology methods will be able to manifest their maximum effect in attaining the efficient utilization of the environment and resources in Taiwan, and the goals of disaster prevention and environmental conservation will be achieved.

## 2. Recycling of Public Construction Resources

Promotion of the use of recycled resources in public construction is a long-term and ongoing effort. The results that have been achieved in this effort so far, and how the effort will be continued in the future, are as follows:

- (1) The "Outline for Recycling of Asphalt Concrete by Government Agencies" was revised and promulgated, and the first and second examination and approval of hot-mix asphalt concrete recycling companies were carried out.
- (2) Practical Seminars for Personnel from Agencies in Charge of Construction in the Recycling of Asphalt Concrete were held in northern, central, and southern Taiwan, with a total of about 500 personnel participating.
- (3) The "Recycling of Waste Glass for Use in Public Construction" was promoted with the trial paving of relatively long sections of road using ground waste glass asphalt.

## IV. Integration of Public Works Technology Databanks

### 1. Unification and Integration of Outline Construction Specifications, and Coding of Engineering Items

Work was completed on the Outline Specifications for Public Construction, Full Edition in 682 chapters, and Short Edition in 342 chapters, and on the expanded Detailed Public Construction Codes

in 524 chapters, for use in carrying out construction work.

### 2. Establishment of a Public Construction Materials Cost Databank and Survey Mechanism

Historical data on bidding cases supplied by agencies in charge of construction was added to Construction Prices magazine, and were collated and used in the establishment of a databank for use by government agencies in compiling budgets and setting floor prices. In addition, the policy goal of floor-price review as contained in the Unified Bidding and Concentrated Procurement Center plan was carried through, along with the compilation of design budgets and bidding by companies.

### 3. Extension of the Computerized Estimation System for Public Construction Costs for Budget Compilation

An Internet cost estimation system was established and online guidance and extension training courses were held so that the results could be extended to all agencies in charge of construction work, in the hope of achieving the automation of spending allocation and screening, the upgrading of working efficiency, and the development of new versions of programs for use online in accordance with the opinions of students.

### 4. Extension of "Basic Charts for Basic-Level Construction"

To carry through the Executive Yuan's policy goal of sustainable operation and with the announcement of new laws and regulations, the PCC completed the "Basic Charts for Basic-Level Construction (Including Eco-technology Methods" (Fourth Edition) and continued the extension of the charts in 2002. The following tasks were accomplished during the year:

- (1) Eight basic-chart extension seminars were held by area.
- (2) The "Basic Charts for Basic-Level Construction (Including Eco-





南投土石流生態重建

會於九十一年度完成「基層公共工程(含生態工法)基本圖彙編」(第四版),並持續推廣基本圖彙編,九十一年完成事項如下:

- (一) 完成基本圖分區推廣研習班八梯次。
- (二) 建置「基層公共工程基本圖(含生態工法)彙編」及其相關施工規範與工料分析(含細目碼)等作業,以及結合前述三者之資訊事宜。

### 五、編撰隧道工程技術準則

台灣地質構造錯綜複雜,隨著公共工程建設的增多,隧道工程所佔之比例及規模亦相對提高,估計未來公共工程中隧道總長約達480公里,概估工程經費高達三千億元。

本會自八十八年十一月起即蒐集國內120個隧道工程案例資料,25個國外著名隧道工程案例,建置成台灣地區隧道工程資料庫,以供未來隧道工程規劃、設計及施工之參考,九十年建立「台灣地區隧道岩體分類及支撐系統」,九十一年完成驗證工作,並著手進行「隧道工程技術準則」之編撰工作。

「隧道工程技術準則」係就台灣過去二十幾年來所累積之隧道設計及施工實務經驗加以彙整,同時納入國內產、官、學界之隧道工程專家意見,九十一年度完成「山岳隧道工程技術準則及解說」之調查、規劃及設計篇,九十二年將完成施工、傳統工法及特殊地質狀況等篇,並編撰「山岳隧道工程之輔助工法」,針對工程執行者於辦理隧道工程之際所應遵守及應參考之事項加以說明,預期九十二年底將可完成,將使工程執行者於未來辦理隧道工程之際有所遵循及參考。

### 六、健全公有建築工程作業

為使各機關辦理公有建築工程作業時,能兼顧其特殊性並考量符合政府採購相關法令規定,本會遂以「各機關辦理公有建築物作業要點」為架構,整編成「各機關辦理公有建築物作業手冊」,並於九十一年一月二日函頒供各機關參採。

technology Methods" were established, along with related construction specifications and analysis of construction materials (including detailed codes), and information in all three fields was integrated.

### 5. Compilation of Technical Standards for Tunnel Engineering

Because of the irregularity and complexity of Taiwan's geologic structure, the ratio and scale of tunnel engineering have increased along with the increase in construction work. The total length of tunnels included in future infrastructure projects is estimated at approximately 480 kilometers, and the cost of building the tunnels is estimated at NT\$300 billion.

Beginning in November 1999, the PCC collected data on 120 domestic tunnel engineering projects and 25 well-known foreign tunnel engineering projects, and compiled them into a tunnel engineering databank for the Taiwan area to be used as a reference in future decision-making and tunnel planning, design, and construction. A Tunnel Rock Mass Classification and Support System for the Taiwan Area was established in 2001 and validation was completed in 2002, and work was started on the compilation of Tunnel Engineering Technical Standards.

The Tunnel Engineering Technical Standards encapsulate the tunnel design and construction experience built up in Taiwan over the past 20-plus years, as well as opinions from the industrial, governmental, and academic sectors as well as from tunnel engineering experts. The surveying, planning, and design sections of "Rules and Interpretations of Hilly Area Tunnel Engineering Technology" were completed in 2002, and the sections on construction, conventional construction methods, and special geological conditions will be finished in 2003. Auxiliary Construction Methods for Hilly Area Tunnel Engineering are also being compiled to provide explanations of matters to which those carrying out construction projects should observe and refer to when engaged in tunnel construction. These "Methods" are to be completed by the end of 2003.

### 6. Strengthening of Public Building Engineering Operations

So that government agencies will be able to take special conditions into account and consider conformity with the laws and regulations governing government procurement when carrying out public building engineering operations, the PCC has compiled a "Public Building Construction and Management Operations Manual for Government Agencies" under the framework of the "Operating Guidelines for Public Building Construction and Management by Government Agencies." The "Operations Manual" was sent to the various government agencies on Jan. 2, 2002.