



節能環保 永續家園

Energy Conservation and Environment Protecting

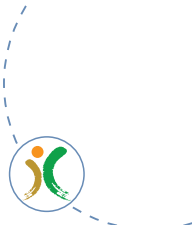
強化公共工程節能減碳

為提升公共工程品質與推動速度，從工程全生命週期考量，並納入節能減碳及永續發展等觀念，修訂相關規定，從法規面確實落實執行。

Strengthening the Public Works Energy Conservation to Reduce the Carbon Emission

To enhance the quality of public construction and boost the speed of its implementation, the PCC considers the life-cycle of public construction projects and includes the concept of energy conservation, carbon reduction, and sustainable development in the revision of related regulations, and enforces them thoroughly from the regulatory aspect.

大佳河濱公園風力發電
Wind power generators in the Dajia Riverside Park



南科台南園區污水處理廠
A sewage treatment plant in Tainan Science Park of the Southern Taiwan Science Park

表1 99年度修訂完成之相關規定
Table 1 Revision of Related Regulations Completed in 2010

工程階段 Construction Stage	修正規定 Regulation Revised	修正內容 Content of Revision	完成日期 Completion Date
審議 Review	政府公共工程計畫與經費審議作業要點 Guidelines for Review of Infrastructure Projects and Budgets	納入機關提報公共工程計畫應包括節能減碳之措施，推動政府機關節能減碳落實工作。 Inclusion of a requirement for agencies to include energy conservation and carbon reduction measures in their construction plans so as to promote energy conservation and carbon reduction by government agencies.	99年8月 Aug. 2010
採購 Procurement	機關委託技術服務廠商評選及計費辦法 Regulations for Selection and Fee Calculation of Technical Service Providers Entrusted by Entities	修正第6條第2項：「前項設計，應符合節省能源、減少溫室氣體排放、保護環境、節約資源、經濟耐用等目的…」。 第17條第1項增列第9款：「…節省能源、減少溫室氣體排放、保護環境、節約資源、經濟耐用…之說明。」機關得將上開項目納為評選考量。 Revision of Article 6, Item 2: "Projects in the previous Item should conform to the objectives of conservation of energy, the reduction of greenhouse gas emissions, protection of the environment, conservation of resources, economy, and durability..." Addition of Article 17, Item 1, Paragraph 9: "Explanation of...conservation of energy, reduction of greenhouse gas emissions, protection of the environment, conservation of resources, economy, and durability." Government agencies should take these factors into consideration in their selection process.	99年1月 Jan. 2010
施工 Construction	工程施工查核小組查核品質缺失扣點紀錄表 Construction Work Surveillance Unit Record Sheet for the Deduction of Points for Quality Deficiencies	增列「永續公共工程－節能減碳」項目，落實推動節能減碳措施，提昇工程品質。 Addition of "Sustainable public construction—energy conservation and carbon reduction" to thoroughly implement energy conservation and carbon reduction measures, and upgrade construction quality.	99年3月 Mar. 2010

建立節能減碳規劃設計參考原則

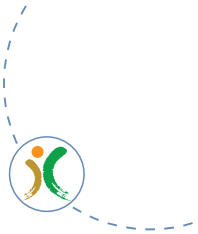
工程會於99年度協調內政部、交通部、經濟部、農委會等機關完成計14類工程節能減碳規劃設計參考原則，提供相關機關參考應用，如表2。

Establishment of Planning and Design Principles for Energy Conservation and Carbon Reduction

In 2010, the PCC coordinated with the Ministry of the Interior, Ministry of Transportation and Communications, Ministry of Economic Affairs, and Council of Agriculture completed the reference principles for energy conservation and carbon reduction planning and design in 14 categories of construction, see the Table 2.

表2 各類節能減碳規劃設計參考原則
Table 2 Planning and Design Principles for Energy Conservation and Carbon Reduction

部會名稱 Agency	工程類別 Construction Category
內政部 Ministry of the Interior (MOI)	下水道系統節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Sewage Systems
	公有建築物節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Public Buildings
	都市更新節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Urban Renewal
交通部 Ministry of Transportation and Communications (MOTC)	一般道路節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for General Roads
	高快速公路網節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Freeway and Expressway Networks
	捷運系統節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Mass Rapid Transit Systems
	自行車路網節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Bikeway Systems
	桃園航空城節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for the Taoyuan Aerotropolis
經濟部 Ministry of Economic Affairs (MOEA)	水利工程類規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Hydraulic Engineering
	商圈改造計畫節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Commercial District Rehabilitation Projects
	電廠工程節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Power Plant Engineering
	油廠工程節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Oil Refinery Engineering
農委會 Council of Agriculture (COA)	水土保持局工程節能減碳規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Soil and Water Conservation Bureau Engineering
工程會 Public Construction Commission (PCC)	公有建築物照明及中央空調系統節能規劃設計參考原則 Reference Principles for Energy Conservation and Carbon Reduction Planning and Design for Air Conditioning Equipment in Public Construction



金陵營區排水系統整治工程
Jinling Base Camp Drainage System Improvement Project

Encouragement of Green Applications

- 1. The "Economic Revitalization Policy – Project to Expand Investment in Public Works" was chosen as the key focus and the agencies in charge were asked to strengthen the realization of green content: green environment, green construction methods, green materials, and green energy. Projects using green content in 2010 accounted for 16.4% of the total in terms of the annual construction budget (as of Mar. 1, 2011), well exceeding the target of 10% (see the Fig. 3).
- 2. To promote the use of green-energy equipment in public construction, the PCC convened numerous seminars with scholars and experts, and helped with the formulation of information for application reference or recommendations. The "Suggested Program for the Use of Small and Medium-sized Wind Power Equipment in Public Construction" was completed in November of 2010 and sent to the different agencies for reference, and a draft "Reference Manual for the Application of Solar Power Equipment in Public Construction" was completed in December.
- 3. The "Promotion Program for Enhancing Energy Efficiency in Public Construction" was announced in December of 2010, and the Bureau of Energy of the Ministry of Economic Affairs, Industrial Technology Research Institute, and related industry associations were invited to organize a PCC Energy Conservation and Carbon Reduction Promotion Committee to extend the spirit of the Energy Savings Performance Guarantee Project. Model contracts are expected to be completed in 2011, and a discussion platform is to be set up to stimulate government-private sector cooperation in upgrading the energy conservation and carbon reduction performance of existing buildings.



花博環生方舟館
EcoARK in the 2010 Taipei International Flora Exposition

鼓勵綠色內涵相關應用

- 一、擇定「振興經濟擴大公共建設投資計畫」為重點，請各主辦機關加強落實綠色內涵－綠色環境、綠色工法、綠色材料及綠色能源，99年實際使用綠色內經費比例達當年度工程經費16.4%（截至100年3月1日），順利達成10%之政策目標，如表3。
- 二、為推廣公共工程使用綠色能源相關設備，多次邀請專家學者辦理座談會，並協助撰寫應用參考或建議資料，分別於99年11月完成「中小型風力發電設備

- 應用於公共工程之建議方案」函頒各機關參考，及12月完成「太陽光電發電設施應用於公共建設參考手冊」（草案）。
- 三、99年12月函頒「公共工程提高能源效率推廣方案」，邀請經濟部能源局、工業技術研究院及相關產業團體組成工程會節能減碳推動小組，推廣節能績效保證專案之精神，預定100年完成相關契約範本，並建立討論平台，以促進政府與民間合作，提高既有建築物之節能減碳效益。

表3 99年振興經濟擴大公共建設投資計畫各部會執行情形
Table 3 Agency operation status of the "Economic Revitalization Policy – Project to Expand Investment in Public Works" in 2010

部會 Agency	主管計畫數 No. of Projects	年度工程經費(千元) Construction Budget (NT\$ 1,000)	綠色內涵相關經費(千元) Green-application Budget (NT\$ 1,000)	綠色內涵經費比例 Ratio of Green-application Budget
內政部 Ministry of the Interior (MOI)	5	22,901,800	5,339,999	23.3%
交通部 Ministry of Transportation and Communications (MOTC)	28	88,214,878	11,911,277	13.5%
原民會 Council of Indigenous Peoples (CIP)	1	883,000	15,752	1.8%
教育部 Ministry of Education (MOE)	2	13,252,000	2,128,781	16.1%
經濟部 Ministry of Economic Affairs (MOEA)	12	19,622,000	3,642,761	18.6%
農委會 Council of Agriculture (COA)	10	10,618,515	2,525,215	23.8%
體委會 Sports Affairs Council (SAC)	1	1,180,000	134,887	11.4%
總計 Total	59	156,672,193	25,698,672	16.4%



宣導永續及節能減碳政策

- 一、99年度辦理「永續公共工程－節能減碳講習推廣計畫」，共舉辦22場講習訓練班、6場現地觀摩行程，參加人次達到2,371人次，課程規劃如表4。

二、自98年配合國家政策，從工程全生命週期的角度將原「生態工程入口網」擴大為「永續公共工程入口網」，持續擴充其內涵，以宣導永續及節能減碳理念、建立資訊集中及討論平台為目標。99年共計新增專欄（含專題報導）22篇、新聞382則、活動訊息63則、參考文獻24則…等，瀏覽人次達19萬餘人次，對於網站資訊滿意度亦達90%以上。

表4 永續公共工程節能減碳講習課程表
Table 4 Curriculum of the Sustainable Public Construction – Energy Conservation/Carbon Reduction Extension Seminar

1小時 1 Hour	(1)永續的理念與政策發展 Sustainable Principles and Policy Development	<ul style="list-style-type: none">環境變遷的趨勢與課題 Trends and Issues in Environmental Change永續發展及節能減碳政策發展 Sustainable Development, Energy Conservation, and Carbon Reduction: Policy Development
	(2)節能減碳概念及調適策略 Energy Conservation and Carbon Reduction Concepts and Adjustment Strategies	<ul style="list-style-type: none">各項環境、氣候資料庫之建立及應用 Establishment and Use of Environmental and Climate Databanks尊重自然環境及國土保育觀念之推廣 Respect for the Natural Environment and Extension of Land Conservation Concepts氣候變遷與新興產業之發展方向 Climate Change and Development Directions for Emerging Industries公共工程全生命週期品質之控管 Control of Public Construction Life-cycle Quality
1小時 1 Hour	(3)公共工程全生命週期節能減碳之概念 Concepts of Life-cycle Energy Conservation and Carbon Reduction in Public Construction	<ul style="list-style-type: none">可行性評估與選址 Feasibility Studies and Site Selection規劃設計：融入綠色內涵概念 Planning and Design: Integrating Green-content Concepts施工營造 Construction Work維護管理 Maintain Work
1.5小時 1.5 Hours	(4)公共工程規劃設計節能減碳之參考準則 Energy Conservation and Carbon Reduction Reference Rules for Public Construction Planning and Design	<ul style="list-style-type: none">因應氣候變遷之考量 Considerations for adaptation to Climate Change環境層面之考量 Considerations at the Environmental Level智慧綠建築之考量 Considerations for Intelligent Green Construction各部會節能減碳規劃設計原則 Energy Conservation and Carbon Reduction Planning and Design for Government Agencies國內外案例介紹與分析 Domestic and Foreign Case Studies
1.5小時 1.5 Hours	(5)節能減碳材料在公共工程之應用 Use of Energy Conserving and Carbon Reducing Materials in Public Construction	<ul style="list-style-type: none">綠色能源之應用 Application of Green Energy再生材料之應用 Use of Recycled Materials天然材料之應用 Use of Natural Materials
1小時 1 Hour	(6)公共工程施工與維護管理準則 Public Construction Work and Maintenance Management Rules	<ul style="list-style-type: none">施工階段之節能減碳準則 Energy Conservation and Carbon Reduction Rules for the Construction Stage施工階段節能減碳材料之應用 Use of Energy Conserving and Carbon Reducing Materials in the Construction Stage維護管理階段之節能減碳準則 Energy Conservation and Carbon Reduction Rules for the Maintenance Management Stage



花博新生三館
Xinsheng Park Area of the 2010 Taipei International Flora Exposition

Dissemination of Sustainability and Energy Conservation/Carbon Reduction Policies

1. The "Sustainable Public Construction – Energy Conservation/Carbon Reduction Extension Seminar Plan" was carried out in 2010, with 22 training seminars and six site observation itineraries held for a total of 2,371 participants. The curriculum is shown in Table 4.

2. In 2009, the PCC worked in line with national policy and from the construction life-cycle aspect, expanded the original "Eco-engineering Portal" into the "Sustainable Public Infrastructure Website" and continued augmenting its content so as to propagate the principles of sustainability, energy conservation, and carbon reduction, as well as to establish a platform for discussion and the centralization of information. A total of 22 new columns (including special reports) were added in 2010, along with 382 news items, 63 items of sports news, 24 reference documents, and more. The site received more than 190,000 hits during the year, and the rate of satisfaction with its information exceeded 90%.