



# GUIDELINES ON EDUCATION POLICY FOR SUSTAINABLE BUILT ENVIRONMENTS

UNITED NATIONS ENVIRONMENT PROGRAMME



**Sustainable Buildings  
and Climate Initiative**

*Promoting Policies and Practices for Sustainability*



BUILT ENVIRONMENT

**Cover Images**

Background: "School of Environmental Sciences building, Charles Sturt University in Albury, Australia" Photo: Mark Fallander  
Inset: "Chongqing, China Cityscape" Photo: Peter Graham

*Copyright © United Nations Environment Programme, 2010*

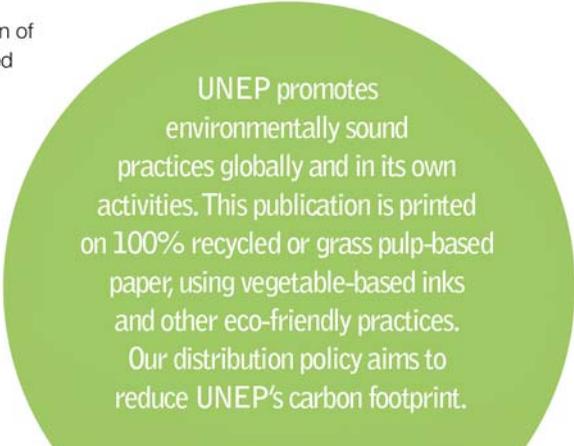
This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. UNEP would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from the United Nations Environment Programme.

**Disclaimer**

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations Environment Programme concerning the legal status of any country, territory, city or area or of its authorities, or concerning delimitation of its frontiers or boundaries. Moreover, the views expressed do not necessarily represent the decision or the stated policy of the United Nations Environment Programme, nor does citing of trade names or commercial processes constitute endorsement.

ISBN: 978-92-807-3095-1



UNEP promotes environmentally sound practices globally and in its own activities. This publication is printed on 100% recycled or grass pulp-based paper, using vegetable-based inks and other eco-friendly practices. Our distribution policy aims to reduce UNEP's carbon footprint.

GUIDELINES ON EDUCATION  
POLICY FOR SUSTAINABLE  
BUILT ENVIRONMENTS

This publication has been produced as part of the Emerging Issues Initiative of the AIT-UNEP RRC.AP and funded by the Netherlands Minister for Development Cooperation, through the Urban Environmental Cluster of UNEP and the UNEP Regional Office for Asia and the Pacific.

The contents of this publication are the sole responsibility of the authors and can in no way be taken to reflect the views of AIT-UNEP RRC.AP, UNEP, or the Netherlands Minister for Development Cooperation.

**Principle Authors:**

Dr. Peter Graham –  
United Nations Environment Programme Sustainable Buildings & Climate Initiative (UNEP-SBCI) &  
Faculty of the Built Environment, University of New South Wales, Australia

Dr. Philip Booth –  
Faculty of the Built Environment, University of New South Wales, Australia

**Contributors:**

Prof. Deo Prasad – Faculty of the Built Environment, UNSW  
Prof. Arvind Krishnan – CEPT Ahmadabad, India  
Prof. Rusong Wang – Chinese Academy of Sciences: Research Centre for Eco-Environmental Sciences, China  
Chen Nan – Wageningen University: The Netherlands  
Bai Wenfeng – Kunming University of Science and Technology: Institute of Green Vernacular Building (IGVB)  
Dr. Fionn Stevenson – School of Architecture, University of Dundee, Scotland  
Dr. S. Cotton – Scott Sutherland School of Architecture, Aberdeen, Scotland  
Dr. Arvind Kumar – Faculty of the Built Environment, UNSW  
Ben Roche – Faculty of the Built Environment, UNSW  
Andre Grant – Faculty of the Built Environment, UNSW

**Conveners:**

Prof. Deo Prasad – Faculty of the Built Environment, UNSW  
Prof. Arvind Krishnan  
Jacob Kurian – Associate Programme Officer, UNEP ROAP  
Marco Silvestri – Associate Programme Officer, AIT-UNEP RRC.AP

**Expert Reference Group:**

Dr. Chrisna Du Plessis – CSIR South Africa  
Prof. Hiroto Takaguchi – Faculty of Human-Environment Studies, Kyushu University Japan  
Prof. Rusong Wang – Chinese Academy of Sciences: Research Centre for Eco-Environmental Sciences China  
International Initiative for Sustainable Built Environments (iiSBE) – Sustainable Building Educators Network.

# TABLE OF CONTENTS

<b>TERMS OF REFERENCE</b>	<b>5</b>
<b>INTRODUCTION</b>	<b>6</b>
<b>PART 1: AN EDUCATIONAL FRAMEWORK FOR SUSTAINABLE BUILT ENVIRONMENTS</b>	<b>9</b>
<b>1.1 ECO-SETTLEMENTS</b>	<b>10</b>
1.1.1 What are eco-settlements, and how do we get there?	10
1.1.2 Sustainable Buildings & Construction	11
1.1.3 Summary	14
<b>1.2 SUSTAINABILITY EDUCATION FOR CREATING ECO-SETTLEMENTS</b>	<b>14</b>
1.2.1 Learning Aims	15
1.2.2 Learning Outcomes	16
1.2.3 Learner-centred Teaching Methods	17
<b>1.3 MONITORING, REPORTING AND EVALUATION METHODS</b>	<b>19</b>
<b>REFERENCES FOR PART 1</b>	<b>21</b>
<b>PART 2: EDUCATION STRATEGIES AND POLICIES</b>	<b>23</b>
<b>2.1 STRATEGIES FOR GOVERNMENTS AND INTER-GOVERNMENTAL BODIES</b>	<b>26</b>
2.1.1 Eco-settlement Education Policy – Review and Reform	26
2.1.2 Continuing Professional Development	26
2.1.3 Capacity Building	27
2.1.4 Encouraging & supporting communities of practice	27
2.1.5 Performance assessment & rating of settlements	27
2.1.6 Lead by example	27
2.1.7 Exemplars	27
<b>2.2 STRATEGIES FOR COMMUNITIES</b>	<b>28</b>
2.2.1 Sustainability monitoring and reporting programs	28
2.2.2 Collaboration	28
2.2.3 Capacity building	29
2.2.4 Learning networks and partnerships	29
2.2.4 Knowledge bases	29
2.2.5 Exemplars	29
<b>2.3 STRATEGIES FOR THE PRIVATE SECTOR</b>	<b>30</b>
2.3.1 Continuing professional development	31
2.3.2 Course, trade and professional accreditation	31
2.3.3 Publications and awards	31
2.3.4 Building performance assessment and rating	31
2.3.5 Public accountability	31
2.3.6 Research and Development	31
2.3.7 Exemplars	31
<b>2.4 STRATEGIES FOR THE FORMAL EDUCATION INSTITUTIONS</b>	<b>32</b>
2.4.1 Curriculum review and reform	32
2.4.2 Networks and partnerships for teaching, research and community engagement	33
2.4.3 Student Involvement	33
2.4.4 Community Engagement	33
2.4.5 Campus eco-redesign and performance monitoring	33
2.4.6 Capacity building and continuing education	33
2.4.7 Exemplars	34

<b>2.5 STRATEGIES FOR CIVIL SOCIETY AND NGOs</b>	<b>35</b>
2.5.1 Performance monitoring, assessment and rating schemes	35
2.5.2 Community engagement project development and grant applications	35
2.5.3 Networks and partnering	35
2.5.4 Capacity building	36
2.5.5 Exemplars	36
<b>2.6 POLICY STRATEGIES FOR MEDIA</b>	<b>37</b>
2.6.1 Network initiatives	37
2.6.2 Promotion and awareness raising	37
2.6.3 Dissemination and distribution	37
2.6.4 Exemplars	37
<b>2.7 STRATEGIES FOR YOUNG PEOPLE</b>	<b>38</b>
2.7.1 Networks and partnering	38
2.7.2 Involvement	38
2.7.3 Empowerment	39
2.7.4 Exemplars	39
<b>2.8 STRATEGIES FOR INTERNATIONAL AGENCIES</b>	<b>40</b>
2.8.1 Networks and partnering	40
2.8.2 Cooperation	40
2.8.3 Dissemination	40
2.8.4 Exemplars	40
<b>2.9 FRAMEWORK FOR ECO-SETTLEMENT EDUCATION</b>	<b>40</b>
2.9.1 Governments and Inter-Governmental Bodies	41
2.9.2 Strategies for Communities	42
2.9.3 Strategies for the Private Sector	43
2.9.4 Strategies for Formal Education Sectors	44
2.9.5 Strategies for Civil Society and NGOs	45
2.9.6 Strategies for Media	46
2.9.7 Strategies for Youth	47
2.9.8 Strategies for International Agencies	48
<b>REFERENCES FOR PART 2</b>	<b>49</b>
<b>PART 3: BEST PRACTICE MODELS OF CURRICULA &amp; PROGRAMS</b>	<b>51</b>
<b>3.1 BEST PRACTICES IN UNIVERSITIES</b>	<b>52</b>
3.1.1 Best Practice for Architectural Education	52
3.1.2 Best Practice for Campuses – ‘Learnsaping’	55
3.1.3 Case Studies of Learnsapes	57
3.1.4 Best practice in community engagement – <i>FBE Out There!</i>	59
<b>3.2 BEST PRACTICE FOR SCHOOLS &amp; TEACHERS</b>	<b>60</b>
3.2.1 The Knowledge Networks Professional Development Model	60
<b>3.3 BEST PRACTICE FOR COMMUNITY EDUCATORS</b>	<b>63</b>
3.3.1 Curitiba – a case study of holistic policies, planning frameworks, education & capacity building	64
3.3.2 Yangzhou Eco-city - a case study of SENCE	66
<b>REFERENCES FOR PART 3</b>	<b>69</b>
<b>APPENDIX A – Learner Centred Strategies</b>	<b>71</b>

## TERMS OF REFERENCE

- Research current policies, knowledge and practices on education for sustainable built environments
- Develop education policy for different built environment stakeholder groups
- Provide exemplars of education for sustainable built environments in formal, informal and professional education.

## INTRODUCTION

More people are moving to and living in cities than ever before. In many regions, demand on existing urban infrastructure, supporting eco-systems and for new building has never been greater. At the same time climate change is creating new vulnerabilities for urban populations that must be addressed. Globally the building sector is responsible for up to 40% of our energy and resource consumption, up to 30% of our solid waste production and up to 30% of all energy-related greenhouse gas emissions. It is clear that such impacts are unsustainable. So how do we learn to build and operate our cities, towns, villages and buildings so that impacts such as these are not only avoided, but so that our built environments repair, replenish and sustain?

These issues highlight the urgent need for education that supports eco-settlement and sustainable building. Sustainability education for the building sector is fundamental to the creation of sustainable urban and rural settlements. *Guidelines on Education Policy for Sustainable Built Environments* has been commissioned by the United Nations Environment Program (UNEP) to contribute to capacity building and policy making during the UNESCO Decade of Education for Sustainable Development.

This guideline provides a framework of:

- Key sustainability education principles;
- Sustainable design values and precepts;
- Generic teaching and learning strategies for targeted stakeholder groups;
- Appropriate pedagogies;
- Best practice teaching/ learning programs; and
- Case studies of exemplary curricula.

The framework presents a synthesis of sustainability education and aims for key stakeholders in the built environment (Figure One). The outcome of this synthesis is a suite of learning aims, strategies and case-study curricula that can empower people to transform cities, towns and villages into eco-settlements. The framework also guides and informs the development of new educational policies that promote the capacity building for sustainable buildings and construction (SBC).



预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_8907](https://www.yunbaogao.cn/report/index/report?reportId=5_8907)

