

**URBAN PLANNING AND ENVIRONMENTAL LAW**  
**QUARTERLY**

(Published since May 1992)

簡家驄律師行 · 城規環保季刊

This year two students were jointly awarded the Fred Kan & Co. Prize for outstanding dissertations submitted in the Master of Sciences (Environmental) course at the University of Hong Kong. We shall review the winning dissertations separately. In this edition we feature Ching Hei Wai's dissertation: *A Review [of] E-Waste Management and an Analysis of Human Exposure to Hazardous Waste Chemicals Due to Informal E-Waste Processing*.

The Editors

**CONTENTS**

FEATURE:	Page
<b>HEALTH HAZARDS ABOUND IN E-WASTE HANDLING.....</b>	<b>1</b>
<b>TOWN PLANNING .....</b>	<b>4</b>
<b>WEST KOWLOON CULTURAL DISTRICT (WKCD) .....</b>	<b>5</b>
<b>HONG KONG BRIEFING.....</b>	<b>7</b>
<b>CLIMATE CHANGE.....</b>	<b>8</b>
<b>ADVISORY COUNCIL ON THE ENVIRONMENT (ACE)...</b>	<b>10</b>
<b>REGIONAL &amp; INTERNATIONAL.....</b>	<b>12</b>
<b>PROSECUTION STATISTICS...</b>	<b>17</b>

**HEALTH HAZARDS ABOUND IN E-WASTE HANDLING**

**Introduction**

The first paragraph of the Abstract sums up the core component of the author's research and writing:

*"This study compares the procedures of formal and informal e-waste recycling; and investigates the relationship between informal e-waste recycling and the health of residents living near the recycling facilities. The informal e-waste recycling facilities are mainly located in developing countries. In these informal recycling businesses, the procedures are raw and crude without any measures in pollution control and state-of-the-art technologies, suggesting the health of the workers and residents living nearby are at risk."*

The point – sad but true – is made that management and regulatory controls of e-waste disposal are generally weakest in developing countries. The author looks at examples of regulations in China, Nigeria and India. Recycling is a particular aspect of e-waste disposal considered in depth in the dissertation.

**Background**

In the last thirty years technology has advanced more than in the previous two thousand years! This is a staggering achievement for mankind. But it has also caused a new, serious environmental problem: how to safely dispose of or recycle our unwanted electronic equipment.

Approximately 20-50 million tones of e-waste is disposed of worldwide each year; only 13.6% is recycled.

E-waste is especially hazardous to human health, as well as the environment. This is because e-waste is composed of two main chemical groups: heavy metals and persistent organic pollutants (POPs). These can be very harmful to human health, especially younger people, in both carcinogenic and non-carcinogenic ways. Examples of heavy metals typically found in e-waste are mercury and cadmium.

POPs are defined as: "organic compounds which have high resistance to photolytic, biological and chemical degradation with low water solubility but high lipid solubility. The compounds are also semi-volatile and halogenated. The above features allow the compounds to be bioaccumulate into fat tissues and can travel a long distance by the atmosphere".

Some of the more harmful of the POPs can be absorbed and accumulated in animal fat tissues, thereby entering the food chain. One of these is a composite of the lethal dioxin and other chemicals, which the author refers to for convenience as PCDD/Fs.

In most developing countries e-waste is simply dumped in landfills. However, China has an established e-waste recycling industry centred on Guiyu in Guangdong Province, which is known as the "Terminal of worldwide e-waste". The dissertation takes Guiyu as its main data source and hazardous waste example. Guiyu's environment is now heavily polluted by heavy metals and POPs. Its air, soil and ground water are severely

degraded, and its population faces significantly increased health risks on a daily basis and from long-term exposure to e-waste without using effective protective clothes or equipment.

### Recycling – e-waste

E-waste is “the electronic products which are near or at the end of their service lives in both consumer and business sectors”. Today, e-waste is the fastest increasing sector of all municipal solid waste. Mobile phones, computers and television sets are the most common e-waste products.

But e-waste contains several valuable metals and materials, such as: gold, cadmium, copper and plastics. The monetary incentive to recycle e-waste (quite apart from clear environmental benefits) is well demonstrated by a United States statistic: in 1998 the gold recovered from 1 tonne of e-waste was more than was recovered from 17 tons of gold-bearing ore.

Formal e-waste recycling is described as: “E-waste is first sorted and tested whether it is operational or not. If it is still functional, then it is categorised and can be sole or donated to secondary users; if it is not functional, the waste is sorted and dismantled with the components reclaimed, resold and reused, and the waste which cannot be sorted in the above two categories will be salvaged and recycled. Through this process, valuable components and hazardous materials are removed to facilitate the recovery process.”

Once valuable materials have been recovered, the residue is disposed of in landfills.

Informal e-waste recycling accounts for more volume of recycled materials in developing countries, mainly because informal recycling recovers a higher percentage of valuable materials by using labour intensive methods (which is a viable option with low wage rates), whilst formal recycling depends on more expensive and less selective mechanical processes.

Lax recycling regulations in developing countries also encourage hands-on, labour intensive recycling methods. In developed countries, there are many more restrictions on the manner of handling hazardous materials.

Export of e-waste from developed to developing countries also accounts for a share of e-waste disposal in the exporting countries. However, most developed countries are signatories to the *Basel Convention* (1992) which prohibits members from transferring their e-waste internationally. Significantly, the U.S.A. is not a signatory.

### Informal e-waste recycling in China

Approximately 50-80% of e-waste in western countries is shipped to developing countries, such as China. China generates domestic e-waste of approximately 2.2 million tonnes per year.

Guiyu has become internationally known as China's e-waste centre. More particularly, the city is well known for its informal e-waste recycling methods. The author describes Guiyu as follows:

*“Guiyu is the biggest and main e-waste recycling town in China. In 2005, its total population was around 150,000 people with 100,000 migrants (Xing et al., 2009). There are 28 villages in Guiyu. There are more than 300 companies and 3000 individual workshops have been set up in 20 of these villages for the handling of e-waste recycling. It is estimated that at least half of the population in Guiyu are participating into the e-waste recycling industries locally, and many of them are women and children. The procedures of e-waste recycling in the formal sector are similar to the recycling process of the formal sector. However unlike the formal method, most of the processes are performed manually with only limited workplace protections and mechanical equipments.”*

*Dismantling of components is one of the cruelest procedures to the workers. In Guiyu, workers have to dismantle the electronic components physically, by using primitive tools such as hammers, electric drill and screw drivers, and even bare hands to clean or dismantle the components. For example, there is a dismantling area particularly for printers recycling in Guiyu, workers have to open the toner cartridges with screw drivers and use brushes and bare hands to wipe the toner into buckets or container without having any health protection. It is known that black toner induces lung and respiratory irritations, and researches have indicated that carbon black toner can cause cancer. Besides the direct health impact to the workers, the accidental leak of hazardous chemicals during the dismantling process is dangerous to the environment and residents nearby the recycling site. While the workers are dismantling scanners and photocopiers, mercury inside the light sources may spill out and release to the air.*

*Thermal and chemical treatments are necessary for e-waste recycling since valuable materials such as metals and plastics are only recovered with the presence of sufficient heat or proper chemical reactions. However, without any suitable state-of-the-art technology, recovering these materials using raw method is very dangerous. For example, recovering copper from wire requires thermal treatment, and in Guiyu, workers typically use open burning method to recover the materials.”*

### Informal e-waste recycling in India

India's consumption of electrical and electronic consumer goods increased by 604% from 1993 to 2000. In 2007, India generated 400,000 tons of domestic e-waste. India, however, is also a major informal e-waste recycling centre, and receives huge volumes of foreign e-waste each year to recycle and dispose of.

Delhi, India's second biggest city, is a major e-waste recycling centre. Part of the description of Delhi's recycling approach is as follows:

*“In Delhi, a large network of e-waste recycling in the informal sector has been built. For an emerging economy, the informal market provides labour, skills and recovered materials at a low price. This can then provide opportunities, not only to the local employment and the second-hand electrical and electronic equipment market, but also to the global markets of e-waste recycling and material recovery. According to the Toxics Link, which is a non-governmental organization based in Delhi, the Indian recycling business generates US\$1.5 billion annually and Delhi accounts for a large proportion. However, behind the great opportunities in India is a great cost to the environment and more importantly, the health of local people. According to the estimation from several non-governmental agencies and civil society organizations, over 25,000 people were working in the informal sector of a e-waste recycling business and handling 10,000 to 20,000 tons of e-waste annually in Delhi. Most of the informal recycling activities are concentrated in the northern part of Delhi. Various e-waste recycling activities are recorded in Delhi, including the recycling of PC monitors, PWBs, motherboards, cables, toner cartridges, light bulbs and tube-lights, and the recycling process is alike to the aforementioned in China. Dismantling using hammers, screw drivers and bare hands are the common methods to dismantle and segregate e-waste components. Open burning and strong acid bathing are the typical methods for chemical extraction for the mentioned e-waste. As the processes are performed in the informal sector, which means that no personal protection gears or measures on pollution control are provided.”*

### Informal e-waste recycling in Nigeria

Lagos is Nigeria's informal e-waste recycling hub. On average, 60,000 tonnes of e-waste, or potential e-waste, material is received by Lagos each year. Lagos also recycles other domestic appliances. Part of the informal recycling system in Lagos is described as follows :

*“Informal waste collectors, known as scavengers, collect e-waste around Lagos by using simple tools such as handcars. The scavengers either buy e-waste from local household and business or collect it from roadside waste dumps. At the end, the recyclers then obtain the e-wastes from the scavengers for recycling. The Ojota Scrap Market is one of the major sorting and dismantling sites in Lagos. Many small e-waste recycling companies are operating inside or beside the scrap market to perform raw dismantling procedures such as smashing CRT for recycling. This operation puts the workers under the threat of inhaling dust containing heavy metals found inside*

the CRT. The Alaba Market Recycling Community is another center for e-waste recycling in Lagos. It is the biggest refurbishing market of electrical and electronic equipment in the whole West Africa and significant amount of e-waste is generated in this market every day. During the refurbishment of e-waste products, workers are required to solder using lead containing solder paste in a poorly ventilated room, which means workers are exposed to fume with certain lead content. Besides, refurbishing, dismantling and sorting procedures, frequent open burning is performed for material extraction, including burning cable to extract copper and burning plastic to reduce the size of waste. PCDD/Fs are formed under these open burning processes, which pose great threat to the workers inside the market. In addition, although recycling is not the major functionality of Ikeja Computer Village, frequent open burnings of unwanted e-waste are happening every day. Besides the recycling process, the destination of e-waste may end in local landfills or dumpsites very often since many of the imported e-waste are non-functional even after refurbishment.”

### Environmental pollution

E-waste contains many toxic chemicals and other polluting components – including heavy metals and brominated flame – which adversely affect ecosystems and human health.

PCDD/Fs are semi-volatile and slightly water soluble. They are also bioaccumulable, meaning they can accumulate in crops and fatty animal tissue. This means PCDD/Fs can also move up the food chain and accumulate in human fatty tissue. PCDD/Fs are especially dangerous to human beings because they are carcinogenic.

The dissertation adopted the e-waste recycling industry in Guiyu as its real-time test site for assessing the various adverse environmental and health impacts of that industry. The following paragraphs are an overview only of the author’s admirable, detailed data chronicling e-waste’s lethal impacts on the environment.

#### Air pollution

The level of PCDD/Fs in Guiyu’s air is extremely high, especially when compared with other cities in the region.

A 2007 study examined air samples from 3 sites: Guiyu, Chedian and a suburb of Guangzhou. Chedian is 9 kilometres and Guangzhou is 450 kilometres from Guiyu. The study concluded that: “the air sample in Guiyu contained the highest amount of PCDD/Fs, with a total concentration of 64.9-2765 pg/m<sup>3</sup> (Table 1), which is about 12-18 times and 37-133 times higher than the samples from Chedian and Guangzhou, respectively. Such level found in Guiyu was the highest among the published data. Wong et al. (2007) also collected air samples in Guiyu and two reference cities – Guangzhou and Hong Kong. The average concentration of PCDD/Fs in Guiyu samples was 6521 fg m<sup>3</sup> (Table 1), which is 1.5 times and 3.1

times higher than that of Guangzhou and Hong Kong.”

#### Soil pollution

In 2006 Hong Kong Baptist University published a report detailing a comparative study of soil pollution at 6 sites in Guiyu.

“The study involved six sites for soil and combusted residue sample collections. The sites include reservoir, acid leaching site, printer roller dump site, rice field, riverbank and duck pond. The worst situation was found in the acid leaching site, with the concentrations ranging from 12500 to 89800 pg/g, which is 203-1096 pg WHO-TEQ/g in dry weight, exceeding the Canadian soil guidelines by 127 times and the US EPA Region 9 risk-based criteria by around three times. Another study investigated the PCDD/Fs soil concentration in open burning sites at Guiyu, and recorded a level of 213-13900 ng TEQ/kg.”

The dissertation contains a helpful, detailed table of data describing air and soil pollution at different sites within Guiyu, which we shall not reproduce here.

#### Health risks

A substantial part of the dissertation is devoted to exploring the sources and levels of direct health risks attributable to e-waste recycling.

The author compared “Review Group” data taken from Guiyu and Luquiao, which is another informal e-waste recycling centre in China. These data were compared with a “Reference Group” of data taken from peer-reviewed papers dealing with other parts of the world.

Taking just one of many pollutants associated with e-waste, PCDD/Fs, the author found that exposure levels in the Review Group were 9.8 times that of the Reference Group. The author comments that the reason for this result is obvious:

“The reviewing locations are close to the e-waste dismantling workshop and material recovery center using thermal and chemical methods or other e-waste recycling related facilities. These facilities are characterized by raw and crude recycling methods such as dismantling using screw driver or bare hands, open burning methods and use of acid or aqua regia for precious material extraction. The informal recycling facilities, which have been reviewed in Chapter 2 for China, India and Nigeria, are generally without any measures in health protection and pollution control mechanism. The hazardous chemicals easily leak out during the recycling process and thus the workers are easily contaminated. Since no measures in pollution control are adopted, the leaked hazardous chemicals are carried by wind and groundwater through different pathways. This is the reason why the residents living near the recycling facilities

but have not participated in the business are also effected by the hazardous chemicals.”

### Regulating e-waste disposal and recycling

#### China

China’s first published policy for e-waste recycling was published in 1996. In 2011 new legislation came into force, which the author summarises as follows:

“The legislation is about the regulations on the disposal and recovery of e-waste, especially to stress the responsibility of the business sector for disposal and recycling the end-of-life electrical and electronic products. The legislation is said to be the most comprehensive one among the previous two. It covers three major part: (1) the business responsibilities on the take-back of e-waste; (2) the hazardous chemicals; and (3) the environmental impact of e-waste recycling facilities. The legislation involves the principle of the extended producer responsibility (EPR) to handle the e-waste issues. By adopting EPR, manufacturers are responsible to the take-back, recovery and final disposal of electrical and electronic products. The responsibilities are reflected as a financial cost to the manufacturer in general, and those costs will be treated as the subsidies for the authorised formal recycling business operated in China. In addition, manufactures are required to define the service lives of the products, which is called environmental expiry date (EED). EED is a date given by the manufacturers ensuring the hazardous chemicals inside the products to remain stable and not release to the environment before the expiry date. The legislation also involves a wide range of regulations on informal e-waste recycling, which includes the close down of unlicensed scrap metal facilities, limiting the storage of e-waste for one year only and banning crude recycling processes such as open burning and acid bathing for material extraction. In addition, the government plans to set up more formal recycling facilities are required to meet with the proposed pollution control standards. Those who have violated the legislation will be fined or charged with criminal offense penalty.”

#### India

The situation in India is similar to China. In 2008 the Ministry of Environment and Forests published guidelines for the e-waste recycling industry in India, but so far legislation to control the harmful effects of e-waste recycling has not been enacted.

As well, India suffers from the same general malaise as China when it comes to environmental protection: weak enforcement of standards laid down by law or policy.

#### Nigeria

Compared to China and India, Nigeria is even worse when it comes to preventing harmful effects of e-waste recycling.

Whilst Nigeria has a general law regulating harmful waste disposal, this does not apply



to e-waste. Therefore, Nigerian e-waste companies re-recycling electrical and electronic products are not regulated by the Ministry of Environment. Rather, the Nigerian government encourages informal e-waste recycling and the importation of e-waste to Nigeria. The business income means more than environmental health to the government.

#### Developed countries

The dissertation compares e-waste recycling in three developed jurisdictions: Switzerland, European Union and Japan.

In each of these jurisdictions e-waste recycling has been an established industry for far longer than in China, for example, where e-waste recycling is still in its infancy. So these developed jurisdictions have implemented far more sophisticated regulatory regimes to control harmful effects of e-waste recycling and to encourage streamlining towards recycling from the time of purchase of the electronic and electrical products. A short extract illustrates the gulf between developed and developing countries' regulatory controls of e-waste disposal/recycling:

*"In Switzerland, e-waste is treated as a special waste instead of a type of municipal solid waste or hazardous waste, so special measures have been taken by the authority and the industries for handling it. All e-waste recycling facilities must receive authorisation from the cantonal government and license from Producer Responsibility Organisations (PROs), which is a voluntary initiative in Switzerland among the industry. They work closely with the local government to meet with the EPR standards. The cantonal government and PROs provide stringent requirements for the e-waste recycling industry to ensure the facilities are run by state-of-art technologies and protective measures, so that the health of workers involved can be assured. The government has also set up emission standards and safety measures on e-waste recycling, and will be done by hiring external auditors to control and monitor the whole recycling system. This further protects the health of employer and people living nearby. If the recycler does not follow the environment, health and safety standards, or if it has been discovered of relating to any illegal e-waste shipping or dumping, PROs will be in charged to revoke their licenses. The enforcement is done by the Swiss Federal Office for the Environment (FOEN)."*

#### Recommendations

The dissertation discusses key factors which developing countries need to address to bring their e-waste disposal and recycling systems more into line with those of developed countries. Of these, two stand out:

- (a) adopting a much more environmentally responsible attitude

towards e-waste, by treating e-waste as hazardous material, not just another component of general municipal hard-waste; and

- (b) rigorous enforcement of e-waste regulations and policies.

Neither of these factors is prominent in the subject developing countries, China, India and Nigeria.

#### Conclusion

The author comments:

*"The paper tries to highlight the common mistakes in their e-waste management and regulations. It turns out they have shared the same characteristics, which are the lack of proper and effective enforcement and the misconception on e-waste recycling business and importation of e-waste. If the countries want to protect the health of their residents and the environment, improvements have to be made upon the existing management and regulation."*

There are several critical steps which developing countries must adopt to improve the environmental and health records of their e-waste recycling industries. These include the author's suggestions set out below.

- (1) Introduce mandatory maximum limits for use of hazardous chemicals in the production of electrical and electronic products.
- (2) Establish a fund to provide subsidies to manufacturers which meet the hazardous chemical limits in their production process.
- (3) A separate government agency should be established to deal with hazardous wastes, with regulatory power covering such issues as: licensing; setting health and environmental standards; providing technical support programmes; and devising and implementing tax incentives for improved e-waste handling methods.
- (4) Set-up a separate another government agency to enforce the legislation. This agency would be responsible for monitoring breaches and taking strict enforcement action against defaulters. (emphasis added)

**Finally** – we congratulate Ching Hei Wai on a well-researched and written dissertation dealing with an increasingly serious environmental problem in China and other developing countries, if not the world at large.

[Footnote: the author's sources references have not been included in quoted extracts.]

## TOWN PLANNING

### Pok Fu Lam gets a towering columbarium

A Christian union's plan to build a 10-storey, 36,000-niche columbarium in Pok Fu Lam has angered residents, who fear it will bring

traffic woes and mar the landscape of the neighbourhood. A spokesman for the Chinese Christian Churches Union said it had every right to build on its land because it belongs to them and the plan has cleared all the regulatory hurdles.

The Lands Department has confirmed the lot is held under a government lease for the purpose of a cemetery for Protestant Christian Chinese. The lease runs for 999 years from 25 December 1883.

The lease carries no restrictions on development parameters. This means the union is not required by law to consult residents or to commission a traffic impact assessment of the development. The union applied to build the columbarium in 2000.

Residents are concerned that this project will have a huge impact on traffic in the area and that its sheer size "is out of keeping with the residential area and surrounding countryside". The neighbourhood consists largely of low-rise blocks of flats. The planned columbarium will also rise above the podium level of a few residential buildings.

The Buildings Department received the application to build the columbarium from the union in August 2000. The proposal drew no objection from government departments and was in compliance with the Buildings Ordinance, so the Department approved its building plans in February 2001. Last month, a residents' alliance met church and government representatives to discuss the matter, but the parties could not reach a compromise.

The Planning Department said it had now written to the union to say the columbarium was not in keeping with the local environment and should be reduced in size.

Both the church union and the Transport Department acknowledged serious traffic problems caused by visitors to a union-run cemetery on Pok Fu Lam Road, especially on grave-sweeping days and festivals.

[SCMP, 29/10/2012]

### Government Hill to be Grade 1 heritage

The grading of Government Hill has been controversial over the last few months, with many hoping it would be declared a Grade 1 historic site in Hong Kong.

It was earlier suggested that the West Wing would be redeveloped into a new commercial tower, the government's recent decision to preserve the former Central Government Offices on Government Hill, comprising the Main, East and West wings, by giving it Grade 1 status ends months of dispute.

The former Government Offices are to house the Department of Justice and law-related non-government organisations, such as international legal, mediation or arbitration agencies. Several sections of the Department will be moved to the complex in early 2015. The others will remain at the Queensway Government Offices in Admiralty.

Rimsy Yuen, the Secretary of Justice, welcomed the decision and said the Admiralty offices are insufficient and that nearby offices have to be rented. This decision will help improve efficiency while saving up HK\$15 million in rent.

The Law Society of Hong Kong and Executive Council members welcomed the government's decision.

[*The Standard*, 14/12/2012]

### "Kai Tak for the people" sought by alliance

A professional alliance has proposed building Home Ownership Scheme flats to accommodate an additional 32,000 people as part of the Kai Tak redevelopment plan. Two local research communities - *Harmonic HK* and *The Professional Commons* - said the proposed plan, "Kai Tak for the People", will allow urban land to be utilised to meet increased housing demand in Hong Kong.

The Development Bureau has said they are considering increasing the housing density of the Kai Tak project. As shown in the current development plan, 6.56 hectares will be used to provide 1,312 units of low-density luxury flats that will accommodate about 3,360 residents.

To meet increasing demand for housing, the alliance proposes that the 6.56 hectares and an additional area of 1.5 hectares be used to develop about 11,000 public units in the north-western corner of the current Sports City site to accommodate an additional 32,000 people. The ratio of the public to private housing mix would increase from 38:62 to 56:44.

Albert Lai Kwong-tak, convener of the research committee of *The Professional Commons*, said the government should help increase supply and meet public needs by providing more public housing.

The alliance may make application to the Town Planning Board ("TPB") to request an amendment of the proposed project.

[*The Standard*, 19/11/2012]

### Approved Sai Ying Pun and Sheung Wan Outline Zoning Plan amended

The TPB announced amendments to the approved Sai Ying Pun and Sheung Wan Outline Zoning Plan (OZP). Major amendments are:

1. Rezoning of U Lam Terrace, Rozario Street and Ladder Street;
2. Incorporation of a completed development (Island Crest) previously zoned "Comprehensive Development Area";
3. Incorporation of gross floor area (GFA) restrictions and requirement for a public open space for the "R(A)22" zone;
4. Revision to the planning intention in the Notes for the "Residential (Group C)" zone;
5. Replacement of the relaxation clause for plot ratio (PR) and building height restrictions in the Remarks of the Notes for the "R(C)" zone with a minor relaxation clause for such restrictions; and
6. Revision to the exemption clause for GFA/PR calculation in relation to caretaker's quarters the "R(A)" and "R(C)" zones.

[*Government Press Release*, 05/10/2012]

### Approved Jardine's Lookout and Wong Nai Chung Gap Outline Zoning Plan referred back for amendment

The TPB announced that the Chief Executive in Council has referred the approved Jardine's Lookout and Wong Nai Chung Gap Outline Zoning Plan (OZP) to the Board for amendment to reflect the latest land use proposals in that area. The particular OZP, incorporating the amendments, will be available for public inspection in accordance with the provisions of the *Town Planning Ordinance*. The Jardine's Lookout and Wong Nai Chung Gap OZP was approved by the Chief Executive in Council in October 2007.

[*Government Press Release*, 19/10/2012]

### Sha Tin Outline Zoning Plan amended

The TPB announced amendments to the approved Sha Tin Outline Zoning Plan (OZP). Major amendments are:

1. Rezoning of two sites in Fo Tan to "Residential (Group A)2" and "Residential (Group A)3" to facilitate public housing and home ownership scheme developments; and
2. Incorporating amendments to reflect the latest land use proposal, as-built situation and minor boundary adjustments to the "Other Specified Uses" and "Water Treatment Works" zone to allow for the existing Sha Tin Water Treatment Works site.

[*Government Press Release*, 26/10/2012]

### Draft Yi O Development Permission Area Plan gazetted

The TPB announced the publication of the Draft Yi O Development Permission Area (DPA) Plan which covers Yi O and a site at Nga Ying Kok with a total area of 23.32 hectares. The site is located in the southwest of Lantau Island and is surrounded by the Lantau North and Lantau South Country Parks.

A spokesperson for the TPB said the general planning intention of the area is to protect its high conservation and landscape value and the natural wonders of the surrounding country parks. An area of 0.19 hectare is zoned "Village Type Development" in the Yi O DPA Plan which reflects the existence of the Yi O village. The remaining 23.15 hectares of the area is zoned "Unspecified Use", pending detailed analysis and studies to establish appropriate land uses. The draft Yi O DPA Plan is now available for public inspection.

[*Government Press Release*, 23/11/2012]

### Clear plan needed to address land supply and housing issues

The state of the real estate market for residential sector has been the subject of discussion since the new administration took office in July and began making up for the failure of its predecessors to adequately address land and housing issues.

The government needs to set itself an annual target for the number of sites and residential units that will become available through redevelopment and lease modification. The only solution is for the government to produce a detailed road map setting out where and when new sites will be released in the foreseeable future.

The starting point for any believable policy has to be population, and if the government is going to plan for the future they need a realistic and informed basis on which to do

so. The government's predictions for Hong Kong's population in 2039 range from 8.5 million to 8.9 million. Either way, the government cannot deal with such growth incrementally and it will be necessary to build one to two new towns to meet with such a level of demand.

Random suggestions that do not appear to have been fully thought through indicate that there is no firm strategy, which causes uncertainty - one minute we are going to move the stadium at Kai Tak for housing and the next we are not. Another good example is that sites for private development on the application list might be used for public housing and then, when challenged, the government backs away from its plans to accelerate land conversion in the New Territories.

The government not only needs to increase the supply of land but also to introduce measures to cool demand. On 26 October 2012, the government introduced another round of measures to increase the rates of special stamp duty and brought in a new buyers' stamp duty, which will be applicable to all residential properties acquired by persons, including companies, except Hong Kong permanent residents. The government aims to discourage trading and speculation.

Although these measures are intended to discourage speculation or trading, philosophically some commentators have taken the view that the buyers' stamp duty is discriminatory and a market intervention, which is contrary to Hong Kong's claims to be an open economy. The measure discriminates against local companies and overseas investors who consider the Hong Kong residential market a "safe haven" for investment and who provide rental accommodation to a significant part of the business community. It is typical of initiatives that lack proper regulatory impact assessment.

International investment is of utmost importance in Hong Kong, as it is in other major cities. In London, over 50 per cent of upper-end market stock is owned by overseas parties, while in Singapore it is about 20 per cent and is seen as a gesture of confidence in government and the economy.

It is probably too late to make any adjustment to the measures introduced by the government. But perhaps it would be more logical to look at a situation where units of up to a certain size, say 70 square metres, are exempt from buyers' stamp duty.

We need clear policy, a firm programme, and minimum intervention in the market in the interim because without all these factors, the situation could lead to market distortion, greater volatility and more uncertainty.

[*South China Morning Post*, 28/11/2012]

## WEST KOWLOON CULTURAL DISTRICT (WKCD)

### West Kowloon opera project will costs double

One of the major projects of West Kowloon Cultural District ("WKCD") has doubled its cost estimate from HK\$1.3 billion in 2006 to HK\$2.7 billion this year. The increased cost for Xiqu Centre for Chinese opera

performance is due to a 100 percent increase in construction costs in the past six years, Chief Secretary Carrie Lam Cheng Yuet-ngor said. The increased costs include additional costs to construct a 2,000 square feet educational facility and a large public space with dining facilities, which were not included in the original plan.

The lantern-shaped design for the Centre has an additional education centre and underground car park besides two theatres, said Lam, who chairs the West Kowloon Cultural District Authority ("WKCD"). A team of Hong Kong-born architects has been chosen to design the Xiqu Centre for Chinese opera, the first arts venue planned for the West Kowloon arts hub. It is expected that the construction of the Centre will start at the end of next year and be completed by 2016.

The WKCD received HK\$21.6 billion from the government previously for the estimated total costs of constructing the hub. Now the amount has increased to HK\$23.5 billion through investments. Lam declined to say whether the arts hub project would exceed its budget but stated that she has told the Authority to control development costs carefully and to secure the best possible investment returns. The government will report the financial situation to the Legislative Council at a later stage.

[*South China Morning Post*, 09/12/2012]

#### Government to support art and culture-related business

Retail rental prices in Hong Kong per square foot are amongst the highest in the world. It is not surprising to see that most of art and culture-related small businesses tend to locate in the newer and less developed parts of Hong Kong as they are unable to afford soaring inner-city rents. The vicious cycle repeats itself when these outlying areas become affluent. Emerging businesses will soon be forced out of their existing business areas as rents climb excessively.

The government is asked to support small business to grow and develop a stronger foothold by establishing programmes for inception funding, venue sponsorship schemes or operational aid. These programmes must be run by the government directly and not the outsourced commercial developers. Only when the system is managed by the authorities can the desperate minority receive genuine assistance from the government.

We are living in a city where the art and culture entities are becoming more and more dispersed. The government must intervene so that a collaborative vision can be developed in parallel with the WKCD. Every existing local or foreign art programme must be interconnected in an efficient way with the WKCD to ensure a complete picture of the Hong Kong arts scene can be seen in the near future.

[*The Standard*, 03/12/2012]

#### HKIE to nurture arts management talents

The WKCD is the largest cultural project ever undertaken in Hong Kong. It is predicted that there will be a great demand for cultural and creative-media expertise in the years to come.

Due to the rapid growth of cultural and creative industries in Asia and increased

regional competition, the Hong Kong Institute of Education offers its first undergraduate programme in creative arts and culture in Hong Kong. The new programme is timely as Hong Kong emerges as a cultural hub with the proposed developments in the WKCD. It is believed that the WKCD will offer opportunities for artistic professionals looking to pursue careers in the sector. Doctor Sydney Pun said that qualified graduates with interdisciplinary training, knowledge in cross-arts issues and management as well as cultural literacy are in high demand.

The programme will combine and balance the training of discipline-based artists and industry-oriented arts managers to equip students to become community artists, with subject strength and community-based proficiency. Graduates will be prepared for a range of possible employment in the cultural and creative industries, the commercial sector, the media and governmental organisations. Graduates may also choose to pursue a teaching career by completing an additional year of professional teacher training, or to undertake further studies locally or overseas.

[*Singtao News*, 27/11/2012]

#### Hong Kong to become a true "cultural hub"

Hong Kong is gradually developing into a true "cultural hub". Three international festivals are to take place on the West Kowloon waterfront promenade in the coming weekends. These include the Renaissance Festival, Clockenflap, and Freespace Fest. However, Michael Lynch, the chief executive of the WKCD, has cautiously said that "we're not quite there yet, with much more to do and look forward to."

As Hong Kong continues to evolve into its cultural identity, it is worth noting that the Hong Kong Eye Exhibition, the first major showcase of Hong Kong contemporary art, will be showing both in Hong Kong and internationally. This exhibition is the third "Eye" initiative following the Korean Eye and Indonesian Eye. It aims to bring more than 50 works by 18 emerging artists to fill London's Saatchi Gallery from 5 December 2012 to 12 January 2013, and ArtisTree in Taikoo Place from 1 to 31 May 2013 in Hong Kong.

[*The Standard*, 26/11/2012]

#### WKCD explores the boundary of public space at Freespace Fest

The WKCD will stage a two-day event, Freespace Fest, at the waterfront promenade of the cultural district on 15 and 16 December 2012. Freespace Fest is an attempt to test the boundary of cultural freedom in public space, where "participants can shout, sing, dance or simply play at their will", said Mr Louis Yu, Performing Arts Executive Director of WKCD.

Yu added, "Freespace Fest is not merely to showcase the beautiful blending of various arts and cultural elements that have shaped Hong Kong, but also to experiment on how to use the future arts space in WKCD's park and its unconventional performance facility - the Freespace. It will be a cross-disciplinary cultural happening rooted in WKCD for Hong Kong people with strong local artist

resence as well as talents from around the world."

"There will be something for everyone to enjoy at Freespace Fest. We hope to provide a boundless space at the venue, both physically and artistically, on-stage and off-stage, for different cultural elements and art forms to cross, for performers and the public to interact, and most importantly for everyone to get involved and be inspired."

Unlike traditional outdoor music festivals, Freespace Fest will represent a dynamism and diversity of Hong Kong's music culture. During the two-date event, music will play non-stop on two stages alternately. More than 20 local and mainland bands will take part, featuring a mix of musical genres from rock to jazz, reggae, classical, post-rock, acoustic, African pop, and everything in-between.

The live music shows will bring an upbeat level of energy to the stages. The District will also glow with dance and outdoor performances that go beyond the boundaries of a theatre space.

[*West Kowloon Cultural District Authority*, 19/11/2012]

#### WKCD announces architectural competition for M+

The WKCD has announced details of the design competition for M+, Hong Kong's future museum for visual culture, and extended an open invitation to architectural practices in Hong Kong and worldwide to submit expressions of interest to participate.

M+, scheduled for completion in 2017, is an ambitious project. The scale of the museum building alone, at approximately 60,000 square metres, will be on par with the Museum of Modern Art in New York. Situated on the waterfront of Victoria Harbour at the edge of a 14-hectare park, it will be one of 17 core arts and cultural venues in the WKCD. M+ will be the flagship hub for visual culture from the 20th and 21st century. The museum will also have alongside major performance spaces, creating interdisciplinary exchange between the visual arts and the performing arts in the city.

The physical design of M+ will be shaped around the museum's core values. Principally it will be a museum for Hong Kong people, firmly rooted in the location and its unique culture, providing a Hong Kong perspective, with a global vision, and expanding to other regions of China, Asia and the rest of the world. It will provide space for artists to meet, exhibit and experiment. It will house a world-class permanent visual culture collection of Hong Kong, Chinese, Asian and beyond in all its forms, providing and presenting multiple flexible platforms for multidisciplinary programming, exploring art, design, architecture and the moving image, celebrating the fluidity between the art forms that is characteristic of Asia's cultural ecology.

M+ also aims to complement the 'white cubes' and 'black boxes' of contemporary art museum with 'third spaces' - new formats of interactive space and new interfaces between public space and back-of-house where learning is prioritised.

M+ will include over 15,000 square metres of exhibition space and a 14,000 square



metres for conservation and storage, an education centre, an archive library and bookstore, theatres and screen facilities, artist-in-residence studios and outdoor green spaces, subject to the future detailed design.

[West Kowloon Cultural District Authority, 17/09/2012]

## HONG KONG BRIEFING

### Government to further reduce power plant emissions

The government published in the Gazette the *Third Technical Memorandum for Allocation of Emission Allowances in Respect of Specified Licences*, which aims to further reduce emissions from the power generation sector from 2017 onwards. The reduction of emissions will help to further improve air quality in the region.

The new technical memorandum (TM), which is issued under the *Air Pollution Control Ordinance* (Cap.311, Laws of Hong Kong), will cap annual emissions from the power generation sector in 2017 and beyond in respect of three air pollutants: sulphur dioxide (SO<sub>2</sub>); nitrogen oxides (NO<sub>x</sub>); and respirable suspended particulates (RSP). The caps will be 10,399 tonnes for SO<sub>2</sub>, 25,950 tonnes for NO<sub>x</sub> and 750 tonnes for RSP. Compared to the emission caps in the second TM for 2015 onwards, emissions of the three air pollutants will be reduced by 17 per cent, 6 per cent and 10 per cent respectively.

A spokesman for the Environmental Protection Department (EPD) said that the new emission caps are built on the efforts of both power companies to maximise use of existing natural gas-fired electricity generation capacity and prioritise use of coal-fired electricity generation units that have been equipped with advanced emission abatement equipment. In addition, the new emission caps will require the power companies to continue their efforts to use low-emission coal as far as possible and maintain the performance of their advanced emission control devices. The power companies will also take up surplus electricity generated from renewable energy (RE) and waste-to-energy (WTE) facilities to reduce coal-fired electricity generation, thereby reducing emissions.

The outputs of RE and WTE each year are affected by a number of factors, such as changes in weather patterns and the generating capacity of the waste materials. The new TM provides for the determination of the final allocation after the actual intake of RE and WTE in the relevant emission year is ascertained.

Emissions from the power generation sector accounted for 50 per cent, 25 per cent and 16 per cent respectively of territory-wide emissions of SO<sub>2</sub>, NO<sub>x</sub> and RSP in 2010. The tightened emission allowances will help improve the air quality in Hong Kong and the Pearl River Delta region.

The new set of emission allowances will come into effect starting on January 1, 2017, i.e. at least four years after the commencement of the TM, in accordance with section 26G(4) of the *Air Pollution Control Ordinance*.

[Press Release, Environmental Protection Department, 19/10/2012]

### Lung Mei beach project to go ahead

The government announced that it will go ahead with its plan to build an artificial beach at Lung Mei, near Tai Po, despite fierce opposition from several environmental groups.

In announcing the decision, the Secretary for Home Affairs also put forward a long-term conservation plan for the area, the *Ting Kok Coastal Conservation Plan*, also known as *Ting Kok Plus*. The Secretary called the plan a “win-win situation”, which would satisfy both the recreational needs of nearby residents and conservation objectives. The EPD promised to take the lead in protecting sensitive sites, restoring damaged ones, managing public access and promoting the educational value of the entire area.

The government said the 200-metre long beach, scheduled to be completed by the swimming season of 2015, will provide a recreational area for 1.25 million people residing in the district.

In response to concerns that the project will adversely impact *kuda* seahorses, the government said the species was “moderately abundant” in Hong Kong waters and that Lung Mei is not the “prime breeding area”.

The Assistant Director of Agriculture, Fisheries and Conservation said that the Environmental Impact Assessment indicates that, in comparison with other locations, such as Ting Kok East, Lung Mei is of lower ecological value.

[China Daily, 26/10/2012]

### Hong Kong has continually failed to meet 25 years old air quality targets

The Audit Commission has released a report criticising the government’s lack of effective action in tackling air pollution. Hong Kong’s air quality has worsened in the past few years; the number of days when the air pollution index exceeded 100 has increased.

Measurements of air pollutant levels have shown that concentrations of nitrogen dioxide and respirable suspended particulates (PM<sub>10</sub>) at the roadside have persistently and significantly exceeded *Air Quality Objectives* (AQOs) originally set by the EPD in 1987. The report said that reasons for this include ineffective implementation of measures to mitigate roadside pollution, poor control of marine emissions and failure to take effective steps to ensure that air quality can meet the proposed 2014 Air Quality Objectives.

*Clean Air Network* (CAN) recommended that the current administration consult all relevant government departments (e.g. the EPD, the Department of Health, the Transport Department and the Hong Kong Observatory) in order to create the most effective air quality policies possible, such as bus-route rationalisation, as mentioned in the Audit Commission’s report.

The report also expressed concern that the proposed 2014 AQOs are set too low to provide adequate protection of public health when compared to the World Health Organization’s (WHO) *Air Quality Guidelines*. CAN pointed out that the air quality targets outlined in the 2014 AQOs allow levels of pollutants comparable to those allowed by less developed cities in the Asia-Pacific region. Hong Kong’s proposed

2014 PM<sub>2.5</sub> (24-hour average) air quality objective is the most lax within the Asia-Pacific region, even more lax than that of Bangalore, India. Even the Mainland’s recently announced AQOs (implementation estimated for 2016) are more stringent than Hong Kong’s 2014 AQOs in terms of allowances of all monitored pollutants. The Audit Commission recommended that the EPD set a long-term goal of adoption of the WHO’s *Air Quality Guidelines* as targets for Hong Kong.

CAN also urged the government to work quickly to improve roadside pollution conditions using measures proposed by Secretary for the Environment, which included no longer issuing licenses to commercial diesel vehicles that are over fifteen years old and implementing a subsidy for corporations to retire polluting vehicles. It is believed that these policies could make a marked difference in cleaning up the city’s air.

CAN hoped that the government will provide a timeline for how and when they will implement the twenty two air quality measures proposed by the EPD in January 2012, including emission caps, infrastructure development and planning and energy efficiency.

On the other hand, the actions of other cities in China further underlined the EPD’s lacklustre efforts. In 2011, the Beijing government invested HK\$2.1 billion in reducing air pollution and Guangzhou committed HK\$860 million for the replacement of high-polluting older vehicles. In contrast, Hong Kong has budgeted only HK\$390 million for implementing air quality policies in 2012 – 2013.

CAN campaign manager pointed out that air pollution causes 3,200 deaths per year in Hong Kong, as calculated by the Hedley Environmental Index, and hurts Hong Kong’s reputation as a world class city, yet the government continues to take little effective action. CAN hoped that the new report will encourage the government to prioritise this issue, which is Hong Kong’s most serious public health problem, more highly.

[Clean Air Network Press Release, 15/11/2012]

### Activists seek judicial review of Lung Mei decision

A coalition of at least 30 groups opposed to the government’s plan to build an artificial beach in Lung Mei, Tai Po, is a step closer to launching an application for judicial review of the controversial project. Campaigners say legal experts advised them that they have a strong case for reversing the government’s decision to issue a permit for the construction of a man-made beach at Lung Mei, in Tolo Harbour.

The Lung Mei project has been denounced by environmentalists because it would harm the survival of some 200 species marine creatures living there. However, the government has said that it will not make any changes to the proposal.

The coalition says that it is considering using section 14 of the *Environmental Impact Assessment Ordinance* (Cap. 499) to seek a judicial review. Under this section, the Director of Environmental Protection may suspend, vary or cancel an environmental

permit if the Director thinks that misleading, wrong, incomplete or false information has been given by the applicant to obtain the permit; but the Director will need the consent of the Secretary for the Environment to do so. The coalition believes that the permit's applicant, the Civil Engineering and Development Department, provided misleading information that underestimated the rich marine ecosystem at Lung Mei in order to obtain the permit in 2010. If the coalition eventually decides to seek a review, it will apply for legal aid. It will also need to raise money from the public to help fund the legal challenge.

[SCMP, 19/11/2012]

### Protesters fear higher flats will degrade air quality

A group of Tseung Kwan O residents oppose the government's plan to increase plot ratios for several residential sites on the district's shoreline over fears it will worsen air pollution.

The residents are worried that increasing plot ratios will result in a "curtain effect," blocking the flow of fresh air due to height and density of buildings and worsen air quality in the area, which has landfills nearby. They do not oppose government moves to increase housing supply, but believe the government should construct buildings in appropriate areas, such as Tiu Keng Leng and Sai Kung. The plot ratio will be raised from 3 times to 3.3 times and from 2 times to 4 times in southern Tseung Kwan O, increasing the number of flats from 2,800 to 3,320.

A member of the government's Long Term Housing Strategy Steering Committee said he is not worried that raising the plot ratio will draw further opposition. He pointed out that a few years ago, people looked for higher quality of living such as lower building density, but now more people just want a home to live in and raising the plot ratio is the best solution to housing problems.

An associate professor in social science at the Hong Kong University of Science and Technology said it is possible that raising the plot ratio will trigger further opposition if the government does not have a detailed building proposal. He opined that one of the reasons the government proposed to raise plot ratio is insufficient land supply, yet some available land is used to develop houses for indigenous villagers.

[The Standard, 03/12/2012]

### Government aims to cut Hong Kong's food waste by 10 per cent

A Food-Wise Hong Kong Steering Committee has been formed to work out strategies and measures to reduce Hong Kong's food waste by 10 per cent in 3 years.

The Steering Committee is tasked with formulating and overseeing implementation strategies of the Food Wise Hong Kong Campaign. The campaign aims to reduce food waste at source. The Committee will work on changing household habits, establishing a code of practice for trades, and facilitating food donations to charity. It will also co-ordinate efforts by government and public bodies to set a good example.

Chaired by the Secretary for the Environment, the Steering Committee

includes executives from catering chain Maxim's and Wellcome supermarket, food bank representatives, school principals, academics and green groups. The Steering Committee and the Food Wise Hong Kong Campaign will initially operate for three years.

Food waste accounts for about 40 per cent of the city's solid waste and the volume has been tipped to rise further as the economy grows. Last year more than 3,500 tonnes of food waste was dumped in landfills. The government also aims to introduce municipal solid waste charges by 2016, and to consult the public next year on how to collect the fees.

A poll conducted by Friends of the Earth in November 2012 found that 65 per cent of about 1,000 respondents supported a waste-disposal fee. That is an increase of 13 percentage points since the group's previous poll, in March, when 51.7 per cent supported the "polluter pays" principle.

[SCMP, 04/12/2012]

### Shark fin trade is booming

A raid by activists on a Hong Kong business has revealed the slaughter of thousands of sharks for their fins, still a mainstay on many Chinese menus.

Shocking pictures have emerged of an estimated 30,000 fins drying on the rooftop of a desolate building in Hong Kong's Kennedy Town district. Workers who were laying out the fins claimed most had been imported and were not harvested from sharks in local waters. The images have angered environmentalists who have campaigned for the trade to be banned.

China remains the world's largest consumer of shark fins. Up to 10,000 tonnes are estimated to be consumed in the country each year, primarily on the mainland. Shark fin soup is still a delicacy in China and Hong Kong and is popular at traditional banquets and weddings. Shark fin has the folk reputation of benefiting health in various ways and boosting sexual potency.

Activists said the Hong Kong discovery – made by *Sea Shepherd*, known for their anti-whaling efforts – was likely the result of a surge in demand for Chinese New Year next month. A *Sea Shepherd* spokesman said: "This is the most graphic, brutal and barbaric part of the industry – the element of chopping a shark's fin off and throwing it (the shark) back into the water is horrific and inhumane." *WildAid Beijing's* Mei May said that shark fin consumption had doubled in the past two decades in China, in line with economic growth and urbanisation.

It is estimated that up to 75,000 sharks a year are killed to fulfill demand in Hong Kong and mainland China. The fins can sell for more than \$630/kg. China is one of the world's last remaining countries to sanction the shark fin trade. The US and the EU have outlawed it. The sharks are left to die after their dorsal fins are removed, which leaves them unable to swim.

The government bowed to demands in July and banned the soup from its official functions – but the ban could reportedly take three years to come into effect.

[The Australian, 06/01/2013]

## CLIMATE CHANGE

### Global warming is causing more hurricanes

Scientists have found support for the controversial idea that global warming is causing more frequent and destructive hurricanes, a subject that has been hotly debated during the past decade.

Data gathered from tide gauges, which monitor rapid changes to sea levels caused by storm surges, show a significant link between both the frequency and intensity of tropical storms and increases in annual temperatures since tidal records began in 1923.

The study found that during the 90-year period, during which the average global temperature increased by 0.7C, extreme hurricanes similar to Katrina, which devastated New Orleans in 2005, were nearly twice as likely in warmer years as colder years.

Although scientists were not able to prove that climate change is causing more large hurricanes, they believe the study is consistent with predictions that global warming and warmer seas could bring about more intense tropical storms.

Hurricanes form when the sea's surface temperature increases above 26C. However, they result from a chaotic interaction between the difference in sea and air temperatures, humidity and wind, so there is disagreement about how frequent they will become in a warmer world.

One researcher said that the lack of data on hurricanes before the satellite age has hampered study of the link between global warming and tropical storms. Many hurricanes out at sea were missed before the first weather satellites were launched about 40 years ago. However, a network of tide gauges around the south-east coast of the US has produced a reliable record of the rapid changes to sea level caused by storm surges resulting from tropical cyclones.

Once the correlation between storm surges and tropical storms was established, the researchers analysed global temperature records to compare the number of storm surges in warm years with the number observed in cold years. It was found that there was a tendency for more cyclones to occur in warmer years. For example:-

#### 2005:

**Wilma** - The most intense Atlantic hurricane on record started in the Caribbean Sea near Jamaica, moving across the Gulf of Mexico to Cancun where it hit land with devastating consequences.

**Katrina** - The most costly hurricane in history caused damages of \$85 billion. The category-3 storm formed over the Bahamas, crossed Florida and the Gulf of Mexico, before striking New Orleans.

#### 1998:

**Gilbert** - The second most intense hurricane observed in the Atlantic. It began to the east of Barbados before hitting Jamaica and the Gulf of Mexico. It raged for nine days, killing 433 people.

[The Independent, 16/10/2012]



## Turning over a new leaf for cleaner air

It's not news that carbon dioxide contributes significantly to global warming. Even though it makes up only 0.04 percent of all atmospheric gases by volume, it encloses the Earth like a greenhouse – absorbing the sun's heat rays and causing the planet's average temperature to soar in the past 200 years.

Whilst the cause and effect of global warming has been brought to world attention in recent decades, scientists are still constantly searching for new ways to reduce carbon emissions, or remove the gas. Tree planting is among the most popular methods, and although we could keep improving on that, there's a question of how much forestry we can accommodate.

But what if the leaves of trees we're talking about are 1,000 times more efficient at soaking up carbon dioxide than your regular photosynthesizing leaf? Klaus Lackner, director of the Lenfest Center for Sustainable Energy at Columbia University in New York, recently introduced this special tree to the world. These artificial leaves look like sheets of papery plastic and are coated in a resin that contains sodium carbonate, which soaks up carbon dioxide from the air and stores it as bicarbonate on the leaf.

If 10 million of these artificial trees are "planted" around the world, they could remove up to 10 percent of our global annual CO<sub>2</sub> emission – the same amount that would take one billion real trees to absorb. Ideally, the stored gas may then be used for purposes such as making liquefied fuel for vehicles. However, the cost of the project is one reason for hesitation – US\$20,000 (HK\$156,000) per tree – which translates to around US\$200 per tonne of CO<sub>2</sub> removed.

But, compared to the American Physical Society's most optimistic estimate for direct CO<sub>2</sub> capture being US\$600 per tonne, the artificial tree plan might actually make economic sense.

[*The Standard*, 23/10/2012]

## Temperatures may rise 6c by 2100

A report by a group of economists has concluded that global temperatures may rise by as much as 6C this century because of the failure of governments to find alternatives to fossil fuels.

According to a study by the accountancy giant PricewaterhouseCoopers (PwC), it will now be almost impossible to keep the increase in global average temperatures up to 2100 within the 2C target that scientists believe might avert dangerous and unpredictable climate change.

An analysis of how fast the major world economies are reducing their emissions of carbon dioxide from fossil fuels suggests that it may already be too late to stay within the 2C target of the United Nations' Intergovernmental Panel on Climate Change.

According to a PwC partner, the global economy would have to reach a "decarbonisation" rate of at least 5.1 per cent a year for the next 39 years to keep within the 2C target. Even doubling our current rate of decarbonisation would still lead to emissions consistent with 6C of warming by the end of the century. To give ourselves a more than 50 per cent chance of avoiding a

2C increase will require a six-fold improvement in our rate of decarbonisation.

[*The Independent*, 05/11/2012]

## Giant pandas threatened by climate change

The survival of China's endangered giant pandas is already threatened by a slow breeding rate and rapid habitat loss, yet a report says that the pandas now also risk losing their staple food, bamboo, to climate change.

A study in China's north-western Qinling Mountains, home to about 270 pandas (about a fifth of the world's wild population), predicts a substantial bamboo decline this century as the world warms. A team of researchers from the United States and China warn in the journal *Nature Climate Change* that the pandas may face a shortage of food unless they can find alternative food resources.

Ninety-nine per cent of the pandas' diet consists of bamboo; they approximately devour 38kg per day. This means the panda's survival is closely linked to a thriving bamboo habitat. However, bamboo's unusual reproductive cycle limits its ability to adapt to climate change. One species studied by the scientists flowers and reproduces only every 30-35 years. Researchers predict that three bamboo species, which make up almost the entire diet of the Qinling pandas, will all but disappear in a warmer climate.

The calculations are based on warming scenarios projected by the Intergovernmental Panel on Climate Change – ranging from rises of 2 to 5 degrees Celsius in summer by century's end, and 3 to 8 degrees in winter. These projections were collated with data on rainfall and greenhouse gas emissions as well as historical growth patterns, to assess the future of bamboo.

Deforestation is already threatening the survival of about half of all bamboo species worldwide. Researchers say bamboo distribution has historically fluctuated in response to changes in the climate. In the modern era, though, even if other areas were to become climatically more suited for bamboo growth, these would be far away and fall outside the present network of protected panda reserves.

The scientists said that conservation efforts should now aim to protect areas that have a better chance of supplying pandas with food, despite climate change. Natural "bridges" could also be created to help the pandas escape from a bamboo famine.

[*SCMP*, 14/11/2012]

## Polar caps melting three times faster than 20 years ago

According to new research using satellite measurements, polar ice sheets are shrinking three times faster than they were 20 years ago. More than 4,200 gigatonnes were lost from polar ice sheets in the period 1992 to 2011, an average of 223Gt a year.

Researchers described the losses as being at "the high end" of forecasts by the Intergovernmental Panel on Climate Change in 2007. The findings are based on previous satellite readings, but have been combined and correlated to provide what

scientists believe is "the most accurate assessment" yet of polar ice loss.

The study found that the rate of net losses of ice contributes to sea-level rises and has increased significantly in only 20 years. During the 1990s, ice sheet loss accounted for 10 per cent of sea-level rises, but in the past five years it has risen to more than 30 per cent.

The new calculations show that melting ice caps caused 11mm of the overall rise since 1992, but the rate of loss is increasing rapidly. In the 1990s, 0.27mm of annual sea-level rise was blamed on polar melting, whereas in the past five years it has risen to 0.95mm annually.

Melting of ice in Greenland has had the biggest impact, contributing 7.4mm to sea-level rises since 1992. Antarctica has contributed 3.7mm but there are clear regional differences. West Antarctica has lost an average 65Gt annually and the Antarctic Peninsular 20Gt, but there has been a 14Gt gain in East Antarctica.

Annual sea-level rises are still small, but are forecast to increase significantly and the study suggests the most pessimistic forecasts will be proved right. The causes and mechanisms behind the increased rate of ice loss are not fully understood. However, it is widely attributed to global warming.

[*The Independent*, 29/11/2012]

## Responses to the outcome of the Doha climate talks

Reactions to the outcome of the UN climate-change meeting in Doha, which concluded on 8 December 2012, have mixed. Representatives from nearly 200 countries who hammered out the final deal – called the *Doha Climate Gateway* – were broadly pleased with it, but they admitted it did not solve all of the issues that needed to be addressed, despite the time spent negotiating the agreement.

Countries are working towards a new global agreement on climate change that would, unlike the Kyoto protocol, require cuts in greenhouse gas emissions from both developed and developing countries, to be signed in 2015 and come into force from 2020. At Doha, they cleared away some of the obstacles to the proposed new treaty, including starting on a new period of the Kyoto protocol that will last until 2020, reorganising the negotiations into a single unified set of talks, and setting out a work programme of negotiations up to 2015.

The EU climate chief said that they have, at Doha, crossed the bridge from the old climate regime to the new system and they are on their way to the 2015 global deal.

But green groups and anti-poverty campaigners blasted the talks. The head of climate and energy at Friends of the Earth said that a weak and dangerously ineffectual agreement is nothing but a polluters' charter – it legitimises a do-nothing approach while whilst creating a mirage that governments are acting in the interests of the planet and its people. He also added that Doha was a disaster zone where poor developing countries were forced to capitulate to the interests of wealthy countries, effectively condemning their own citizens to the climate crisis. The blame for the disaster in Doha can be laid squarely at the foot of countries like

the United States, which have blocked and bullied those which are serious about tackling climate change.

The executive director of Greenpeace International said recent extreme weather events, e.g. the Typhoon Bopha which hit the Philippines, showed the urgency of taking swift action on greenhouse gas emissions. He accused delegates at the conference of being out of touch with climate reality.

The vice president at the Asian Development Bank said the result had provided a "gateway" to a new agreement, or at least "kept the door open for a possible robust and ambitious future" deal. But he warned that extreme weather events were a particular problem for Asia as there is increasing evidence that Asia is more vulnerable to the impact of natural disaster due to climate change. Typhoon Bopha, which recently hit the Philippines and has impacted about 200,000 people, is yet another example of the devastation that such events cause. He is of the view that Asia must act now, regardless of the pace of international negotiations, as neglecting these threats will put millions of the region's most vulnerable people at risk of increased poverty, ill health and premature death. Among other measures, Asia needs to mobilise massive funds for climate change adaptation; \$40bn a year for Asia and the Pacific would be a very conservative estimate.

[The Guardian, 10/12/2012]

## ADVISORY COUNCIL ON THE ENVIRONMENT (ACE)

Summary of minutes of the 187<sup>th</sup> Meeting of the Advisory Council on the Environment held on 16 July 2012

North East New Territories New Development Areas Planning and Engineering Study Stage Three Public Engagement

Members were briefed on the proposed Recommended Outline Development Plans ("RODPs") formulated for the three New Development Areas ("NDAs") which include Kwu Tung North ("KTN"), Fanling North ("FLN") and Ping Che/Ta Kwu Ling ("PC/TKL") under the Stage Three Public Engagement of the North East New Territories New Development Areas Planning and Engineering Study. The Study was to establish a planning and development framework for the NDAs to meet long-term housing, social, economic and environmental needs. The NDAs will be implemented in phases. Construction works are to commence in 2017. The first population intake is expected to be in 2022. The three NDAs are expected to be completed by 2031. Some points arising from the meeting are:-

1. The project team was urged to be more vigilant in pursuing green initiatives in planning the new generation of new towns, such as to further explore: (i) potential demand from private electric vehicles in addition to electric buses when planning the provision of electricity charging facilities in the areas; (ii) a system for providing a more equitable sharing of public space that favours energy-efficient transport, creates less pollution and requires less spatial requirements; and (iii) a cycle

hiring scheme through which residents can park their bicycles at rail stations or public transport interchanges, thereby encouraging a change to mass transit for commuting between and outside the NDAs.

2. The meeting heard that the key design concept of the NDAs is a public transport based development. For example, more than 80% of KTN NDA's population will reside within 500m of the proposed railway station. Residential clusters will be conveniently served by major public transport interchanges. These designs aim to encourage people to use public transport within the NDAs. However, as the government had yet to decide on promoting cycling as a mode of transport, the cycle hiring proposal has not been included in the current design. Nevertheless, a comprehensive cycling and pedestrian network will be proposed for the three NDAs and the proposal will be looked at in greater details at a later stage with the aim of promoting more cycling by residents.
3. A member enquired as to the standards for the provision of bicycle parking spaces. The government replied that the current planning standards and guidelines provide for bicycle parking spaces within residential developments which had cycle tracks connected to nearby rail stations, and such requirements will be incorporated in the sales conditions for development sites within the three NDAs, subject to the advice of the Transport Department. Two members remarked that there is insufficient provision of bicycle parking spaces along the East Rail Line and that there are no park-and-ride facilities for Fanling; those in Sheung Shui have already reached their capacity.
4. A member proposed that in order to reduce traffic congestion and carbon emissions in the three NDAs, the government could consider building a light rail to connect the Spur Line to the KTN and PC/TKL NDAs, which are farther away from the rail line.
5. The committee expressed concern that the clustering of building developments and road hubs would increase the concentration of air pollutants. There is medical evidence showing that residents living close to heavy transport routes have a higher incidence of allergies and respiratory problems. The government replied that the project team is planning an environmental-friendly transportation system in the NDAs, one of the proposals being the introduction of electric buses. In particular, the proposed town centre of KTN NDA is intended to be a car-free zone.
6. The committee asked the government to explain the design of the Nature Park and the plan to preserve rural character of Long Valley. Consultants advising the government replied that Long Valley was treasured for its rural environment. It has the largest continuous patch of farmland in Hong Kong. About 37 hectares of Long Valley are of high ecological value and would be designated as a Nature Park, which will become a "green lung" for the KTN and FLN NDAs. An access control system to the Nature Park will be introduced as

a preliminary proposal for protection of wildlife. In this connection, a visitor centre with free access will be provided in the southern part of the Park, where visiting groups can view wildlife under supervision. There will also be a restricted access zone at the centre of the Park where there will be a footpath network subject to a permit system so that the number of people entering the area will be restricted. The third northern area will remain largely undisturbed, and visitors will only be allowed to view this section from suitable vantage points. A detailed management plan of access control into Long Valley will be created, in consultation with stakeholders, including AFCD, following approval of the EIA report.

7. A member was concerned about the impact on migrant birds' flight paths. In reply, consultants said that on the key flight paths are along river channels, and there will be little development in these areas. In addition, migrant birds do not fly to the Kwu Tung North NDA due to the absence of suitable wildlife habitat. Furthermore, the lighting and noise barriers will be carefully designed so as to minimise any disturbance to migrant birds.
8. There was an enquiry as to the loss of wetland due to the development. The government replied that the loss would be less than 10 hectares and compensating for the wetland loss is in fact one of the considerations in designating Long Valley as a Nature Park.
9. A member considered that there was insufficient buffer area between Long Valley and the residential area nearby, and suggested preserving Long Valley in its totality as a Nature Park for better conservation management. Another member agreed that there seems to be no statutory framework for managing the Nature Park when compared with the management of country parks under the *Country Parks Ordinance*. The consultants replied that the AFCD had agreed in principle to manage the Nature Park. The EIA report will include a preliminary management plan for Long Valley. A detailed management plan will be formulated under a separate study, which will include inputs from other stakeholders.
10. The government said that there are three recognised villages in the NDAs including Ho Sheung Heung Village and Yin Kong Village in KTN NDA, and Ping Che Yuen Ha Village in PC/TKL NDA, which will be kept intact. Low-density housing development will be built near the existing indigenous villages as "Residential Zone 4" on the RODPs. These are to compensate for the affected village houses/building lots under the Village Removal Terms. These will provide a choice of development for affected building owners for relocation within the NDAs.
11. A member enquired about the reasons for zoning the area to the north and south of the Nature Park as "Agriculture". The government replied that there is essentially not much difference between "Green Belt" and "Agriculture" zones in ecological sense.

- The areas are zoned "Agriculture" as they are primarily agricultural land. The Nature Park combines farming activities with nature conservation activities. A member commented that many areas zoned "Agriculture" on the statutory plans had eventually been encroached on by other developments like village houses and other uses. She urged the project team to re-consider zoning the concerned areas as "Green Belt" for a more stringent nature conservation purpose.
12. A member was concerned about the size of "Village Type Development" ("V") zone as well as the future land use of the "Special Industrial" ("SI") zone within the PC/TKL NDA. The government replied that they had conducted a thorough research of the 10-year demand on small houses and the existing land supply before delineating the zoning for the three recognized villages.
  13. A member enquired on the heritage impact assessment conducted by the government. The government replied that all heritage and historical buildings within the NDAs will be preserved. The suggestion that the existing Lung Yeuk Tau Heritage Trail be extended to cover sites of cultural value in Kwu Tung and Fanling will be looked into at a later stage of their study.
  14. There was an enquiry regarding the use of treated effluents. The government commented that the quality of such effluent from the NDAs would need to meet stringent requirements as it would be discharged to Deep Bay which is a highly sensitive water body. Additional costs for non-potable uses (e.g. toilet flushing and landscape irrigation) will be relatively small. Therefore it will be more cost-effective to use the treated effluent, instead of fresh water, as flushing water in the NDAs.
  15. The issue of the use of renewable energy in the NDAs and compliance with the new air quality objectives ("AQOs") in the EIA study was raised by a member. The consultants commented that the government had suggested using renewable energy in public places with no target set at this stage. The government replied that the new AQOs will come into effect only in 2014 and the EIA report for the NDAs is being compiled based on prevailing AQOs. A member raised the point that specific air quality targets should be set at an early stage to ensure compliance of all parties concerned.
  16. A member recommended that since NDAs were new town planning projects for some years ahead and in view of the rapid change in public expectations of new town design, the project team should be more innovative in accommodating sustainable and world-class architectural designs in their plan. Government policies, such as reducing waste, should also be incorporated into their plan.
  17. The committee concluded that the ACE was supportive of the government's plan to develop the three NDAs into green and sustainable communities. ACE recommended that the government should build in more flexibility in the plan to incorporate new design concepts and to cater for the introduction of new technologies that could come in the years ahead.
- Report on the 120<sup>th</sup> Environmental Impact Assessment ("EIA") Subcommittee Meeting (ACE Paper 8/2012)*
- Report on the recommendations of the EIA Subcommittee on the EIA report on "Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley, Tai Po" ("SLT Project").*
- The EIA report was released for public inspection from 21 May to 19 June 2012. ACE concurred with its members that the ecological values and significance of SLT Valley were beyond doubt. It would be ideal if the whole site could be conserved in its entirety. Members were invited to express their views by considering whether the project was an appropriate approach to conservation management.
- The government promulgated the New Nature Conservative Policy ("NNCP") in 2004, aiming to identify practicable ways for better achieving nature conservation objectives in general and to enhance conservation of ecologically important sites that were mostly in private ownership in particular. Twelve sites, including SLT Valley, were identified for enhanced conservation under NNCP.
- The government understands that some might view SLT Valley as a country park enclave. Following the Sai Wan incident in 2010, the government was committed to better protecting those enclaves which are not subject to statutory controls, e.g. those not covered under the *Outline Zoning Plan* by either including them in country parks or determining their proper uses through statutory planning. For the SLT project, subject to the passage of the EIA process, the project proponent will have to go through other relevant statutory processes.
- A member enquired as to whether the proposed project would disturb the existing ecological status of SLT Valley and the goal of Public-Private Partnership ("PPP") Pilot Scheme. The government replied that some of the land in the 12 priority sites under NNCP are under private ownership. The objectives of PPP Pilot Scheme are to provide necessary economic incentives to land owners to conserve the sites with ecological significance on a long-term basis by allowing an agreed scale of development at the ecologically less sensitive portion of the site.
- The main concept of the SLT project is to devise a *Conservation Management Plan* for the whole SLT Valley. Details of the proposed CMP have yet to be worked out.
- The following matters, discussed at the meeting of 25 June 2012, were recapped:
1. The ecological survey showed that the Development Site should be categorised as "shrubland grassland mosaic".
  2. In relation to concerns over the presence of a seasonal stream at the boundary of the Development Site, field visits were conducted in both wet and dry seasons which confirmed that no natural watercourse was found within the boundary of the Development Site.
3. Fireflies were identified in the area within the proposed Ecological Reserve. Both turtles and fireflies would be included as the target species for conservation in the future CMP.
  4. The subcommittee proposed that a detailed surface drainage/hydrology plan for the water catchment area of the Development Site should be submitted before construction works commence.
  5. Members might have to consider the potential threats to SLT Valley if PPP Pilot Scheme could not come into place and if the site was just left in its present state. The government did not have any specific views on the types of development to be pursued at the project site, which might include a columbarium, so long as their impact was environmentally acceptable. The current proposal was the only project out of the six submissions received under PPP Pilot Scheme that was deemed satisfactory and could be supported by the government following detailed assessment.
  6. A member pointed out the importance of proactive management in habitat enhancement to conserve rare and unique species like dragonflies and *Macropodus hongkongensis* (香港鬥魚) and to achieve effective ecological succession cycles.
  7. A member cited a press interview of a member of ACE that the recorded butterfly species have dropped by 30% in the neighbouring Fung Yuen due to hill fires and various human activities in SLT Valley. That called for an urgent need to conserve SLT Valley. The EIA report had not addressed these concerns.
  8. ACE invited its members to consider the following three options regarding the stance of ACE over the EIA report:
    - a. agreed the recommendations of the EIA Subcommittee and endorsed the EIA report with the proposed conditions and recommendations; or
    - b. did not endorse the EIA report with justification; or
    - c. seek clarifications/supplementary information from the concerned parties on specific questions/concerns raised at the meeting for further discussion before ACE came to a conclusion.
  9. In view of the issues raised by ACE members, the EIA authority could seek additional information from the project proponent under the EIA process. Within 30 days of receiving the additional, the Director of Environmental Protection will have to decide whether to approve the EIA report. ACE might also consider meeting the project proponent again before tendering its comments on the EIA report to the DEP.
  10. ACE agreed to have a special meeting to discuss the subject EIA report when the supplementary information is available.



### CHINA

#### Poachers target migratory species

On a misty September night, a flock of egrets swoop silently through the Luoxiao Mountains. They pass low over Hunan province's Guidong county into the glare of dozens of LED lights pointing skyward from a valley. Gunfire erupts and birds tumble to the ground amid squawks. Men laugh as they pick up dead egrets from the grass and stuff them into sacks.

The scene is part of a 12-minute documentary produced by the *Changsha Evening News*, which has helped expose an increasingly serious problem of poaching in mainland rural areas, and has sparked new calls for the government to implement more effective protection measures for migratory birds that cross its territory.

In one "good harvest", poachers might expect to bag as much as a tonne of wild birds, including the threatened egrets. Each autumn, millions of birds pass over Hunan's mountains and lakes on their way to warmer climes in the south. Tens of thousands never finish the trip. They are shot, sold, cooked and consumed in remote villages – despite strict laws against poaching and gun possession.

With mountains on its western and eastern borders and Dongting Lake – China's second largest – in the middle, Hunan provides a crucial pathway for the birds, some travelling all the way from Siberia.

At least 44 species spend spring and early autumn in the province, including some, like swans, great white egrets and the Chinese merganser, a wild duck, that are protected by national law.

The hunting and eating of wild birds has long been a tradition in Hunan, as well as in neighbouring Jiangxi and Guangdong. Many locals believe that wild birds are more nourishing than farmed poultry. The trade is now so big that experts say it has begun to threaten the existence of some species.

Some poachers are well organised and travel from north to south along migration routes to bag as many birds as possible. Hunters can expect to make more than 10,000 yuan (HK\$12,400) a month during a migration. Depending on the species, the price of a single bird ranges from several yuan to several hundred yuan. Bird hunting is also common in the Hunan cities of Shaoyang, Yiyang, Loudi and Chenshou.

Public outrage over the revelation of poaching prompted the State Forestry to issue an emergency ban on wild bird hunting, save for a few select purposes, such as research, aviation safety and epidemic control.

The Beijing-based environmental group *Green Beagle* said bird poaching stretches far beyond Hunan, and that similar practices occur in Jiangxi province.

The eating of ricebirds has long been popular in Guangdong. Some Dongguan residents call the small birds that feed on rice paddies "flying ginseng", because they believe eating them invigorates the body. The provincial

government listed ricebirds as a protected species in 2001. But the *Nanfang Daily* reports that Dongguan farm markets still sell the birds.

[SCMP, 28/12/2012]

### EUROPE

#### EU reforms to conserve fish stocks

Members of the European parliament supported fisheries reforms to protect endangered species and reduce the amount of unwanted fish being discarded at sea.

Under the proposed reform, limits would be set as to the amount of caught fish which may be discarded. For some species with a high survivability rate, like prawns and crabs, up to 5% of the catch is allowed to be thrown back into the sea. In addition, trawlers will be subsidised in the installation of more ecological equipment, such as new nets, to minimise unwanted by-catch. There would also be tougher monitoring of fish harvesting activities. All trawlers will be obliged to land all catches in accordance with a calendar for each species.

[BBC News, 19/12/2012]

#### EU moves protects fish stocks

The European Union on Tuesday took a significant step towards protecting its threatened fish stocks when a parliamentary committee backed a series of reforms aimed at boosting fish supplies to sustainable levels by 2020.

The 13-10 committee vote surprised environmentalists, who are accustomed to decades of policy inaction as fish stocks plunged in the continent's waters. Statistics released the day of the vote show that EU catches have declined by almost 40 percent in 15 years.

Even if the full parliament backs the proposals, which aim to toughen fleet management while easing pressure on dwindling stocks, legislators still have to wrestle with member governments before such measures could be pushed through. Nonetheless, environmentalists lauded the committee's action.

The fishing committee "has voted to end 30 years of failed fisheries management by requiring EU fisheries ministers not to exceed scientific advice when setting fishing limits, and to restore fish stocks," said Uta Bellion of the *Pew Environment Group*.

The Eurostat agency released statistics showing that catches declined from 8.07 million tons in 1995 to 4.94 million tons in 2010 as stocks of fish, such as cod and bluefin tuna, dwindled dramatically. Quotas for fishermen also became more restrictive, to reflect the dearth of supplies.

Meanwhile, EU fisheries ministers began their marathon negotiating session to negotiate catch-quotas for 2013. Environmental groups fear the quotas will be set well above scientific advice for sustainable fishing, while fishermen fear they will further threaten employment.

[Manila Bulletin, 20/12/2012]

### Baby boost for birds

There was an unusual boost of the population of the threatened Bewick's swans in the past year. Although the quantity of birds has dropped since the 90s, a recent survey recorded the highest percentage of overall average quantity of young swans across northern Europe.

Experts had no idea as to this year's sudden boost in the number of Bewick's swans. Some speculated that weather might be a major contributing factor. The *UK Wildfowl and Wetlands Trust* (the "WWT") said that obvious dangers to swans include illegal shooting and lead poisoning. The WWT noted that almost 25% of dead swans died from lead poisoning, such as when they accidentally consumed spent lead gunshot on the ground when they eat grit. Nevertheless, this year's good breeding season is very much welcome by the WWT.

[BBC News, 24/12/2012]

### ANTARCTICA

#### West Antarctic warming faster than expected

US scientists have observed for the first time signs of warming during the summer months of the southern hemisphere. Scientists warned that it is extremely rare for the summer temperature of the West Antarctic to get above zero. The fact that West Antarctic summer temperature is rising could mean that the West Antarctic Ice Sheets do not just melt from the bottom, but they may also be melting from the top.

It has been thought to date that West Antarctic Ice Sheets are warmed by the ocean, but this discovery shows that the warming could also be caused by changes in winds and weather patterns, as well as other atmospheric factors.

Although scientists were slow to admit that human activities played a part in this summer warming of the West Antarctic, they hinted that human activities could be part of the reasons behind it.

[BBC News, 23/12/2012]

### SOUTH AFRICA

#### Surveillance drones used to save rhinos

Approximately 400 rhinos were killed this year in the Kruger National Park in the South Africa. In order to save rhinos from extinction, a rhino farmer in South Africa is planning to adopt surveillance drones to combat poachers. Surveillance drones were originally designed for the US military.

Clive Vivier, a co-founder of a rhino reserve in South Africa, has already obtained permission from the US state department to buy these drones. Vivier has spent two years liaising with the South African civil aviation officials, and on their approval he plans to put ten drones in the skies above Kruger park, and twenty drones over other vulnerable reserves in South Africa. Vivier believes that the drones are economical to use and sophisticated enough to spot and aid in the arrest of poachers. Representatives from the South African National Parks are generally supportive of this move to put "eyes in the sky".

[The Guardian, 25/12/2012]

## BRAZIL

### Brazil forest campaign goes digital

Until now, landowners who broke Brazil's environmental laws by clearing their farms of native forest once had only one way to redress the situation as far as government inspectors were concerned: plant trees. Now, they can clear their names by just pointing and clicking.

Following decades spent trying to protect its once vast, but rapidly shrinking, rain forests, Brazil has turned to the digital world and launched a new platform, called BVRio, that allows growers with more untouched forest on their land than is legally required to sell "quotas" to farmers who fall short, one hectare at a time, for a price that will be determined by supply and demand.

From environmentalists to landowners, all sides agree the privately developed tool could revolutionise Brazil's ability to protect the world's biggest rainforest and help in enforcing the country's just-enacted environmental law.

Under the rule, growers have to keep a "legal reserve" or a minimum amount of native growth on their properties ranging from 20 percent to 80 percent of their land, depending on the type of vegetation. The trading platform launched this week allows farmers to find and negotiate directly with each other.

For landowners, the new tool will be a boon, said founder Pedro Moura Costa. Buying a forest quota will likely be cheaper, and it certainly will be easier, than replanting a corresponding amount of native vegetation. About 400 property owners pre-registered with BVRio before its start.

"Planting trees, for someone who might be in an entirely different business, is very hard," Costa said. "Going into BVRio and meeting their legal requirements in seconds is much easier."

Environmentalists believe the legislation will protect the integrity of each biome, or ecosystem, because quotas are only allowed to be bought and sold within biologically similar areas. For example, a farmer in the central Prazilian "cerrado" biome may not sell his extra quotas to an Amazonian cattle rancher who clear-cut tropical rainforest and needs an acre of trees.

That creates an incentive for owners of intact biodiversity-rich forest to keep it that way, said Paulo Barreto, a senior forestry researcher at Imazon, an environmental watch-dog agency. "This was something that was really needed," he said.

Saving what's left of Brazil's rainforests, and reviving swaths of destroyed vegetation, is key to trying to maintain or improve the planet's health.

[*Manila Bulletin*, 20/12/2012]

## PHILIPPINES

### Mariveles seeks mountain watershed protection

The municipality of Mariveles sought the help of President Benigno S. Aquino III to declare its mountain range and watersheds as national protected areas, as top officials here expressed "alarm" over the devastation wrought on the town's resources.

Several cases of illegal logging and charcoal-making have allegedly stripped the Mariveles mountain range, causing flashfloods in the mountainous town. During previous typhoons that had not happened.

This month, four men were arrested for illegally making and packing charcoal. Operatives of the Anti-Illegal Logging Task Force recovered 58 sacks of charcoal.

"Before, we could still see deer, wild pigs and wild chicken roaming the areas. There is still undiscovered wildlife in our mountains," said Concepcion.

Municipal Administrator Luis Gonzales sent a letter to Presidential Adviser on Environmental Protection requesting him to encourage President Aquino to cover the town's mountain range and watersheds under Republic Act 7586 or the National Integrated Protected Areas System Act (NIPAS).

"We will strongly support Mayor Concepcion's request as this will further protect their forested areas and watershed," said Department of Environment and Natural Resources Central Luzon Regional Executive Director Maximo O. Dishoso. The government is targeting to reforest at least 44,000 more denuded forest lands, through its Forest Management Bureau, recently launched the Forestland Management Program (FMP) at the agency's academy in Caranglan, Nueva Ecija. The 10-year Japan-aided undertaking seeks to reforest by 2022 at least 40,000 hectares of denuded forestlands in Upper Pampanga Basin by organising and enlisting the support of local communities and people's organisations from seven barangays in the watersheds of Carranglan-Talavera and Pantabangan.

Mr. Dichoso pointed out that the programme also aims to contribute to disaster risk mitigation efforts and promote the socio-economic improvement of upland dwellers, through enterprise development projects and securing of land tenure rights.

Under NIPAS coverage, the protected areas can no longer be exploited and professional management will oversee the safeguarding of the resources, with guards and boundary limits.

[*Manila Bulletin*, 20/12/2012]

## CANADA

### Gray seals to be culled

Canadian senators have endorsed a plan to cull 70,000 gray seals in the southern Gulf of Saint Lawrence in an effort to preserve ground-fish stocks. The Senate Standing Committee on Fisheries and Oceans called for the "targeted removal" of gray seals, whose hefty appetite is supposedly preventing the recovery of the cod fishery.

Critics said that in this multi-species ecosystem, you cannot count on a reduction in seals to have a positive impact on cod stocks. The committee acknowledged that more research is needed to determine the percentage of cod in a seal's diet.

The total population of gray seals in eastern Canada increased from about 13,000 in 1960 to around 410,000 in 2010. In the Gulf of Saint Lawrence, the gray seal population hit a record 104,000 in the same period.

[*The Standard*, 25/10/2012]

## U.S.A.

### Volt ahead in e-car sales stakes

General Motors' Chevrolet Volt widened its lead as the top-selling US rechargeable car this year and Toyota expanded plug-in Prius deliveries, as Nissan said it was working to boost electric Leaf sales.

Sales through to September of battery-only vehicles and those with both battery packs and a petrol engine for added range almost tripled to about 31,400 from 11,094 a year earlier.

The Volt, with a record 2,851 sales last month, leads with 16,348 for the year, up fourfold, followed by 7,734 Prius plug-ins and 5,212 Leafs. GM's addition of a discounted lease for the Volt, US\$299 a month for a car with a US\$39,145 base price, is boosting demand for the model.

Demand for rechargeable cars has not matched initial expectations of Detroit-based GM and Nissan, which targeted a market of 1 million such vehicles by 2015.

Buyers in markets such as California can now lease a Leaf SV hatchback for US\$199 a month for 36 months, a bargain based on the car's US\$36,050 base price.

Nissan, which had a goal of selling 20,000 Leafs in the US this year, has been working with dealers to refine how it markets the all-electric car that goes at least 113 kilometres per charge. The Japan-based company sold 984 of the hatchbacks last month, up from 685 in August. Still, sales fell 4.6 per cent from a year earlier.

The Volt, which gets about 61 kilometres a charge, qualifies for a US\$7,500 federal tax credit, as does the Leaf.

The base model plug-in Prius costs US\$32,000, before a US\$2,500 federal credit. Other rechargeable vehicles for sale include Ford's Focus EV, Honda's Fit EV and Mitsubishi's i-MiEV battery car.

Separately, Toyota said sales of its entire Prius hybrid line doubled to 18,932 last month.

Fisker Automotive's US\$103,000 plug-in Karma, which had about 1,500 sales this year, follows the models from GM, Toyota and Nissan.

[*SCMP*, 04/10/2012]

## UGANDA

Judgment in a case initiated in 2002, in which *Greenwatch(U)* sued the Attorney General and the National Environment Management Authority (NEMA), seeking an order banning the use, distribution and sale of plastic or polythene bags of less than 100 microns, has finally been delivered. The ruling, in favour of *Greenwatch(U)*, was delivered on 5 October 2012 by Uganda's High Court in Kampala.

The court agreed with the applicant and declared that polythene/plastic bags (commonly referred to as 'kavera') violate the right of the citizens of Uganda to a clean and healthy environment. The court ordered that drafting of the bill (seeking the regulation and use of all plastics of less than 100 microns) be expeditiously done to protect the environment from further harm

and damage, in addition to that which has already been caused by the use of kavera.

This is a major milestone in the environmental protection landscape in Uganda, considering the menace that the polythene bags have caused over time.

[*Greenwatch press release, 06/10/2012*]



Members of ADVOCASIA



An Association of Asian Commercial Law Firms

Sydney, Australia

**COLIN BIGGERS & PAISLEY**

Level 42, 2 Park Street  
Sydney, NSW 2000  
Australia  
Tel: (612) 8281-4555  
Fax: (612) 8281-4567

Brisbane, Australia

**COOPER GRACE WARD**

Level 21, 400 George Street  
Brisbane  
QLD 4000  
Australia  
Tel: (61) 7-3231-2444  
Fax: (61) 7-3221-4356

Perth, Australia

**KOTT GUNNING**

Level 8, AMP Building  
140 St Georges Terrace  
WA 6000, Australia  
Tel: (618) 9321-3755  
Fax: (618) 9321-3465

Melbourne, Australia

**MADDOCKS**

140 William Street, Melbourne  
Victoria 3000, Australia  
Tel: (613) 9288-0555  
Fax: (613) 9288-0666

Adelaide, Australia

**NORMAN WATERHOUSE**

Level 15, 45 Pirie Street, Adelaide 5000  
South Australia  
Tel: (618) 8210-1200  
Fax: (618) 8210-1234

Macau

**ANTÓNIO RIBEIRO BAGUINHO - LAWYERS  
AND PRIVATE NOTARIES**

Av. da Amizade  
555, Edif. Landmark  
ICBC Tower, 13 Floor, Room 1308  
Macau  
Tel: (853) 28788128  
Fax: (853) 28705351

Hong Kong, China

**FRED KAN & CO.**

Suite 3104-07, Central Plaza  
18 Harbour Road  
Hong Kong  
Tel: (852) 2598-1318  
Fax: (852) 2588-1318

Baotou City, China

**JIANZHONG LAW FIRM**

The Middle Part of Jianshe Road  
Baotou, Inner Mongolia  
P.R.China  
Tel: (86) 472-7155473  
Fax: (86) 472-7155474

Beijing, China

**JINCHENG TONGDA & NEAL LAW FIRM**

10th Floor, China World Tower  
No. 1 Jianguo Menwai Avenue  
Beijing 100004  
China  
Tel: (86) 10 5706 8585  
Fax: (86) 10 8515 0267

Qindao, China

**QINDAO LAW FIRM**

22/F, Northern Tower, Golden Square  
20 Hong Kong Road(M),  
Qingdao, P.R.China  
Postal Code 266071  
Tel: 86-532-85023100  
Fax: 86-532-85023080

Shanghai, China

**SHANGHAI UNITED LAW FIRM**

14/F, China Insurance Building  
166 East Lujiazui Road  
Shanghai, P.R. China  
Postal Code 200120  
Tel: (86) 21-68419377  
Fax: (86) 21-68419499

Mumbai, India

**DHRUVE LILADHAR & CO**

61/62 Free Press House, 6th Floor  
215, Free Press Journal Marg  
Nariman Point  
Mumbai 400 021  
India  
Tel: (91) 22-6760-6000  
Fax: (91) 22-6760-6001

New Delhi, India

**O.P. KHAITAN & CO.**

Khaitan House B-1,  
Defence Colony, New Delhi-110 024  
India  
Tel: (91) 11-4650-1000  
Fax: (91) 11-2433-7958

Jakarta, Indonesia

**ALFREDO ASSOCIATES**

Mega Plaza 2<sup>nd</sup> Floor, Zone B  
Jalan H. R. Rasuna Said Kav. C-3  
Jakarta 12920, Indonesia  
Tel: (62) 2-1527-9109

Tokyo, Japan

**SOGA LAW OFFICE**

2F, Yotsuya Y's Bldg.  
7-6 Honshiocho Shinjuku-ku  
Tokyo 160-0003  
Japan  
Tel: (81) 3-5919-3022  
Fax: (81) 3-5919-3350

Kuala Lumpur, Malaysia

**CHEANG & ARIFF**

39 Court @ Loke Mansion  
No. 273A, Jalan Medan Tuanku  
50300 Kuala Lumpur, Malaysia  
Tel: (603) 2691-0803  
Fax: (603) 2693- 4475

Auckland, New Zealand

**HESKETH HENRY**

Private Bag 92093  
Auckland  
1142, New Zealand  
Tel: (64) 9-375-8700  
Fax: (64) 9-309-4494

Manila, Philippines

**HERRERA TEEHANKEE &**

**CABRERA LAW OFFICES**

5<sup>th</sup> Floor, SGV II Building  
6758 Ayala Avenue  
Makati City 1200, Philippines  
Tel: (63) 2-813-7111  
Fax: (63) 2-840-5555

Singapore

**JOSEPH TAN JUDE BENNY LLP (JTJB)**

No. 6 Shenton Way,  
#23-08,  
DBS Building Tower Two  
Singapore 068809  
Tel: (65) 6220-9388  
Fax: (65) 6225 7827

Colombo, Sri Lanka

**D.N. THURAIRAJAH & CO.**

No. 16/3, Sulaiman Terrace  
Colombo 00050  
Sri Lanka  
Tel: (94) 1-1250-3314  
Fax: (94) 1- 1250-3313

Bangkok, Thailand

**APISITH & ALLIANCE**

57 Park Ventures Ecoplex, 9th Floor  
Unit 907 Wireless Road, Lumpini  
Pathumwan  
Bangkok 10330  
Thailand  
Tel: (66) 2108-2860  
Fax: (66) 2655-2265

Dubai, United Arab Emirates

**LUTFI & CO.**

901 Al Attar Business Tower

Sheikh Zayed Road

Dubai, United Arab Emirates

Tel: (97) 14-3798-298

Fax: (97) 14-3798-689

Ho Chi Minh City, Vietnam

**LUATVIET ADVOCATES AND SOLICITORS**

19<sup>th</sup> Floor Vincom Center

72 Le Thanh Ton Street

Ben Nghe Ward

Dist 1, Ho Chi Minh City

Vietnam

Tel: (84) 8-3824-8440

Fax: (84) 8-3824-8441

**Convictions under environmental legislation:  
October to December 2012 (January 2013 data  
not available)**

**[Note: the EPD no longer classifies second  
(and subsequent) offences.]**

The EPD's summary of convictions recorded and fines imposed during the above period is as follows:

*October 2012*

Twenty-eight convictions were recorded in October for breaches of legislation enforced by the Environmental Protection Department.

Four of the convictions were under the Air Pollution Control Ordinance, 10 under the Noise Control Ordinance and 14 under the Waste Disposal Ordinance.

The heaviest fine in October was HK\$30,000, imposed on a company that carried out prescribed construction work in a designated area without a valid construction noise permit.

*November 2012*

Fifteen convictions were recorded in November for breaches of legislation enforced by the Environmental Protection Department.

Seven of the convictions were under the Air Pollution Control Ordinance, 1 under the Noise Control Ordinance, 6 under the Waste Disposal Ordinance and 1 under the Water Pollution Control Ordinance.

The heaviest fine in November was HK\$20,000, assessed separately against a company and its employee for depositing waste unlawfully.

*December 2012*

Thirty convictions were recorded in December for breaches of legislation enforced by the Environmental Protection Department.

Eleven of the convictions were under the Air Pollution Control Ordinance, 7 under the Noise Control Ordinance and 12 under the Waste Disposal Ordinance.

The heaviest fine in December was HK\$25,000 for using powered mechanical equipment without a valid construction noise permit and carrying out prescribed construction work in a designated area without a valid construction noise permit.

**Fred Kan & Co.  
Solicitors  
Suite 3104-07 Central Plaza  
18 Harbour Road  
Wanchai  
Hong Kong**