New Urban Communities Authority



الوحدة المركزية للمدن المستدامة والطاقة المتجددة

Central Unit for Sustainable Cities

&

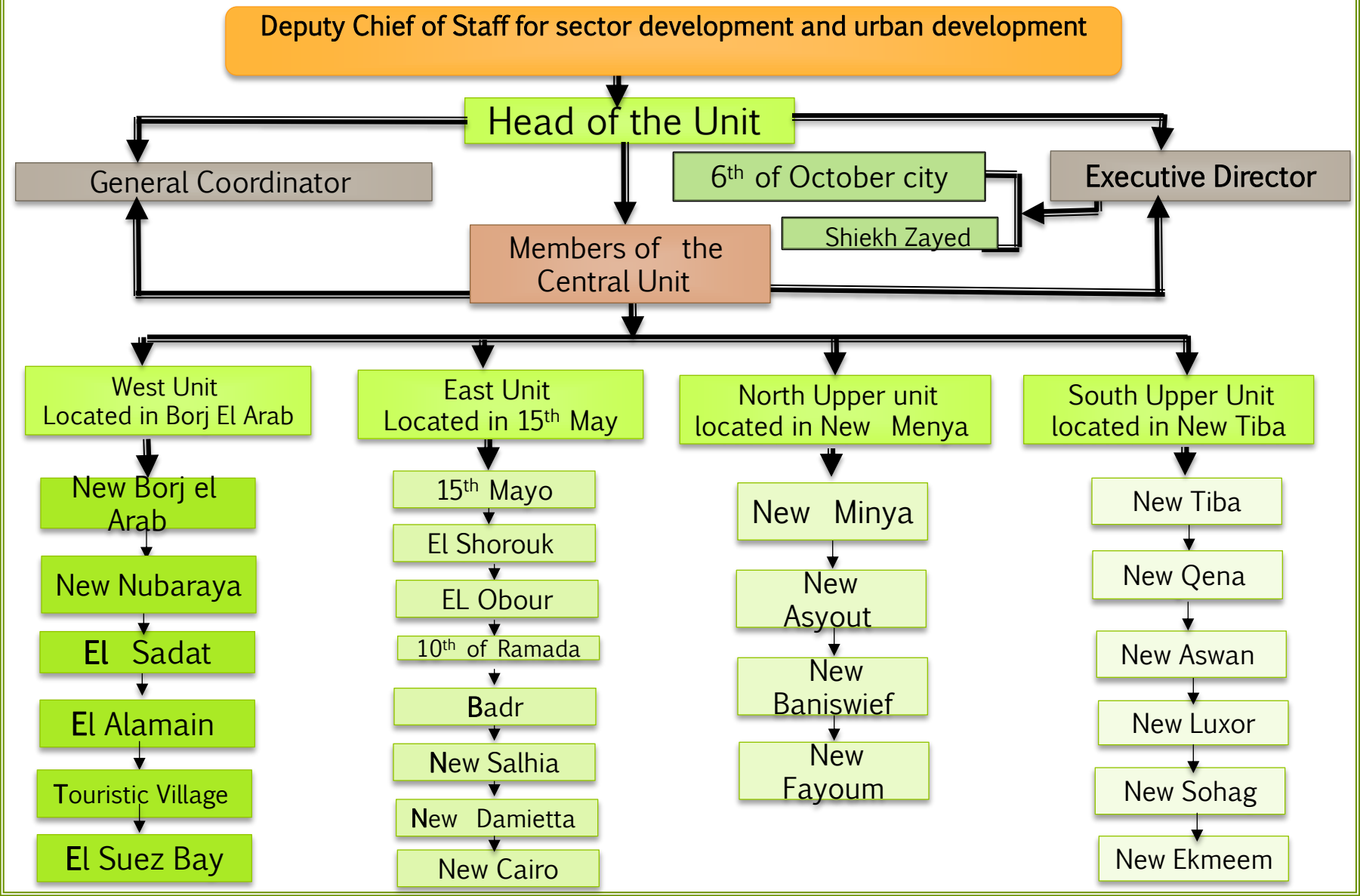
Renewable Energy

Dr. Hend Farouh

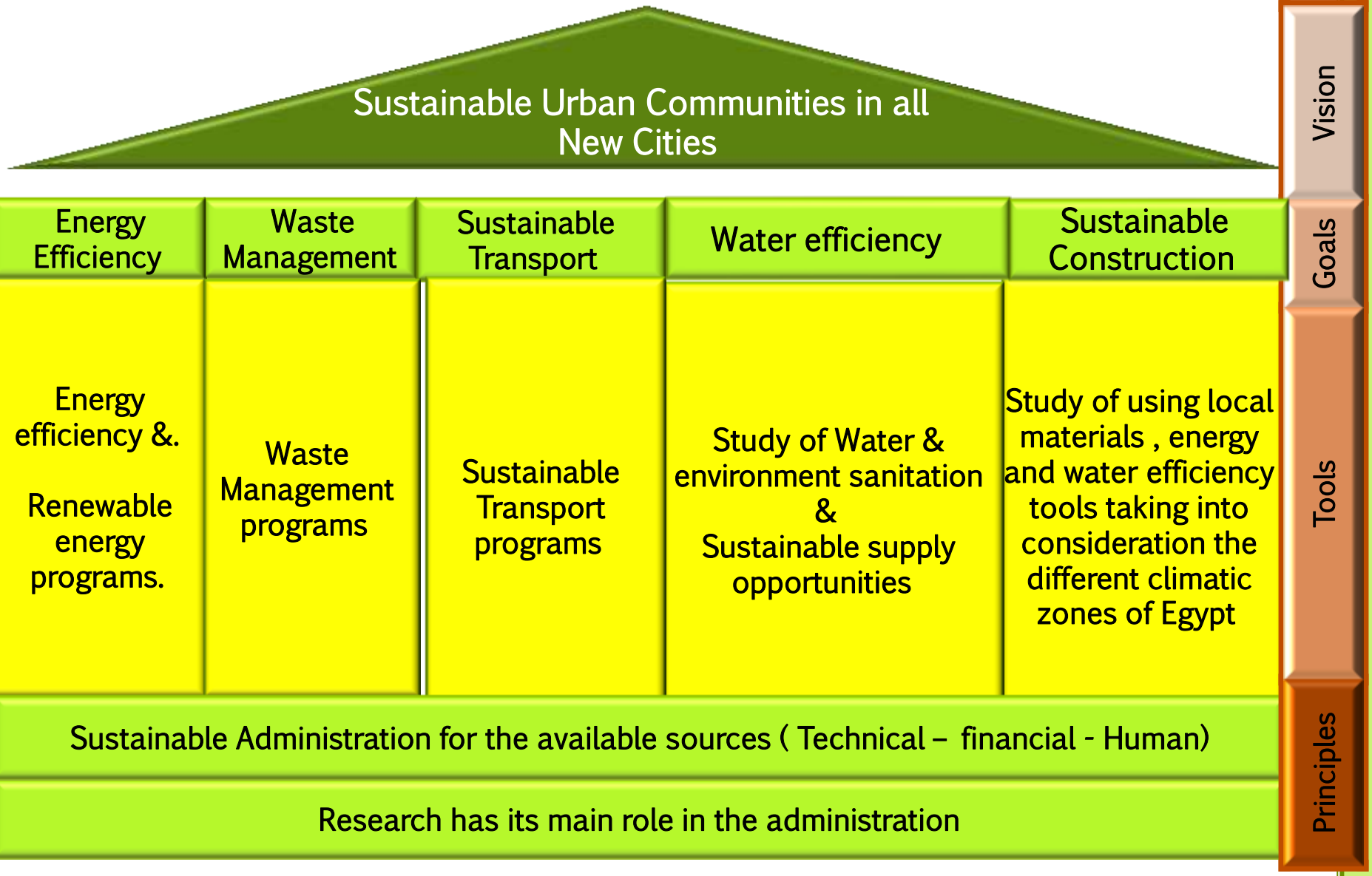
Executive Director of the Central Unit for Stainable Cities & RE

New Urban Communities Authority

Organizational Structure The Central Unit for Sustainable Cities & Renewable Energy



Strategic map for the Unit



Current Projects in the field of Energy Efficiency and Renewable Energy in the New Communities

1st: Current Projects in the field of Energy Efficiency and Renewable Energy in the New Communities

Street Lighting	Solar Energy	Energy Efficiency
Using PV cells and Led lamps in the streets	Using PV on the roof tops	Using Led in Lightening
	Using Solar energy in the new cities	Dissemination of the energy efficiency Concept in the new cities
	Using solar heaters on the roof tops	

Current projects in Energy Efficiency field

Projects in energy Efficiency& Using LED in Local authorities

-Changing the lighting system in the local authority building for new Tiba City

- A study made by each local authority for the energy efficiency of all the buildings

Current projects in Energy Efficiency

-Using LED lightening in the New Urban Communities Authority building

-Developing an energy efficiency plan and using Led in all new cities

Current projects in Energy Efficiency

1-Using the LED lightening in the New Urban Community Authority building

Financing Sides (Funders)	-50% scholarship from improving energy efficiency program UNDP -5o% scholarship from Shamsk ya Masr Initiative -Energy efficiency unit , Ministerial council ..
Monitoring & Evaluation for the project	-in cooperation with improving energy efficiency (UNDP) -Energy Rationalization Unit . Ministerial Council -All measurements & evaluation will be done for all the building

Current projects in energy Efficiency Field

1- Number of exchangeable lamps in the NUCA building

Place of installation	Number for importing	Power watt	Type(LED)	م
internal	3625	9	60 CM	1
internal	250	18	120 CM	2
internal	515	7	Equivalent to Halogen	

Existing Lighting System Power (calculated) (kW)	143.5 kW
New Lighting System Power (calculated) (kW)	33.1 kW
% of calculated savings in power	76.5%
Annual consumption before changing (from electricity bills) (kWh)	651276
Annual consumption after changing (from electricity bills) (kWh)	490488
% of saving in consumption	24.7 %
Annual Cost Savings (LE)	69943
Investment Cost (LE)	239140 LE
Payback period (Month)	3.4 years

Projects in the street lighting

Project 1: Replacement of LED on the main roads in New cities and other new cities

It has been replaced in street lighting the power of the sodium 400 Watt by LED power of 100 watts.

Project 1:
Project to replace sodium bulbs with LED in 7 new cities

Coordination with the National Service of the Armed Forces device to replace some of the existing street lighting headlamp of sodium and mercury implemented since long periods by LED costing 80 million pounds in the cities (6th of October - New Cairo- El Shorouk - El Obour – 10TH of Ramadan- Shiekh Zayed- New Borj el Arab)

The City	The number of LED lights, which will be replaced
El Obour	10,000
El Shorouk	3,500
New Cairo	**5,000**
Borj El Arab	3,500
6th of October	5,000
El Sheikh Zayed	1,500
10th of Ramadan	1,000

Project 2:
Installing LED lighting Streets in new cities

21040

LED under installation

كشاف إضاءة ليد تم ترسيته

22684

Led in the tendering process

كشاف إضاءة ليد جاري طرحه

43724

كشاف إضاءة ليد

Total Led which will be installed by end of 2016

1- Replaced 300 sodium bulbs of 450 watt by LED bulbs of 110 watt at El Hosaree mosque in 6 th of October city

2- Installation of 90 LED bulbs of 110 watt within the Mall of Arabia parking

Current Projects in the field of Solar Energy in the New Communities

خريطة محطات الطاقة الشمسية التابعة لهيئة المجتمعات العمرانية الجديدة (21)

- تم التركيب و التشغيل (8)
- جاري الانتهاء من إجراءات الطرح (5)
- قيد الدراسة بهيئه الطاقة الجديدة (8)

Current projects in Solar Energy

3. Project of installing solar power station with a capacity, 50 kw on the NUCA Building

-50% of the NUCA's budget -50% donation from the Initiative Shmsk ya Masr - Unit of Energy Efficiency – the Ministerial Council	Funders
-In cooperation with the unit of energy conservation and the Ministerial Council -Doing work measurements and follow-up and evaluation of the building	Follow-up and evaluation of the project

Current projects in Solar Energy

1- Solar energy station on the roof of Tiba local authority by the power of 90 kw

Current projects in Solar Energy

PV cells above the local authority building of Borj el Arab by power of 65 kw/ h

Opening of Borj el Arab solar energy plant by H.E Ministry of Housing , Utilities &Urban Communities

Solar Energy plant above El Sadat Local authority building, 65KW/h

Solar Energy plant above 15th of May Local authority building by 45 KW /h

محطة الطاقة الشمسية قدرة 45 ك .وات مدينة 15 مايو

العائد المادى من محطة الطاقة الشمسية من تاريخ 2015/9/19 وحتى 2016/1/28	17023جنية
الطاقة الانتاجية للمحطة من بدء التشغيل وحتى تاريخه	18707كيلو وات
الطاقة المنتجة شهرى	4253.9 كيلو وات
المساهمه فى تخفيض التلوث البيئى بمادة ثانى اكسيد الكربون	ما يعادل 10 t ثانى اكسيد الكربون
متوسط الطاقة الفعلية المنتجة من المحطة	35.2 كيلو وات
متوسط انتاج الخلية الواحدة	4.01 كيلو وات/ساعة/م2

قبل تركيب المحطة متوسط الاستهلاك الشهرى من خلال شبكة شركة الكهرباء (11500) كيلو.وات

بعد تركيب المحطة متوسط الاستهلاك الشهرى من خلال شبكة شركة الكهرباء (7900) كيلو.وات

حوالي40 % من الاستهلاك يتم من خلال الطاقة الشمسية

Solar Energy plant above New Minya Local Authority building by 45 KW/h

Total Production from April 2015 – Jan 2016

258 MWH

Saved Money since April 2015

205322 LE

CO2
132 ton was reduced

Projects in the field of solar energy

Installation of solar heaters on the rooftops of buildings in new Tiba , Sohag , Asyout & Badr

It is an integrated system for the implementation mechanisms of solar water heaters in new cities with Technical support of Egyptian unit of Energy Efficiency

- The terms of reference of the technical specifications and codes

Document quality and accreditation systems of solar heaters in the housing and control mechanisms that complement the document specifications and requirements of foundations and organizations and uses of solar water heaters in the buildings sector (document can display all the details of the discussion)

- Preparation of a draft ministerial decision for the dissemination of solar heating in the domestic service sector gradually use

Installation of Solar Heaters in New Tiba City

Installation of Solar heaters above 4 Social buildings in Tiba City in cooperation with energy Efficiency Unit (Shamsk ya Masr)

Number of 3 half centered water solar heaters system working by natural loop & opened circle using the flat solar collector

Central Solar water heater working by forced loop & opened circle using the flat Solar Collector

Current projects in the Street Lighting using PV

1-Lighting the west Road for Tiba- Qena of 4 km , using PV cells and Led lamps

2-lighting Nile sat Road by 6 km PV + Led off grid

3-Exchanging the Led lamps in the main Road in front of New Tiba local authority building

انارة طريق طيبة – قنا الصحراوى الشرقى بطول 4 كم

قدرة المحطة	٢٥ كيلو وات. ساعة
عدد ألواح الخلايا الشمسية	٢٠٤ لوح (قدرة اللوح الواحد ٢٦٥ وات ويحتوي على عدد ٦٠ خلية شمسية)
عدد مصفوفات الخلايا الشمسية	٤ مصفوفات بعدد ألواح ٥١ لوح لكل مصفوفة
عدد البطاريات	٩٦ بطارية (سعة البطارية ٣٧٨٠ امبير.ساعة ، ٢ فولت من نوع الرصاص الحمضي)
عدد الأعمدة	٢٠٠ عامود (طول العامود ٩ متر بذراع واحد)
عدد الكشافات	٢٠٠ كشاف بقدرة ١٠٠ وات
عدد عواكس التيار (inverter)	٦ عاكس تيار (off grid (inverter


وزارة التنمية والمرافق والمجتمعات العمرانية
هيئة المجتمعات العمرانية الجديدة
جهاز مدينة طيبة الجديدة
المحطة المركزية للطاقة الشمسية
لمدينة طيبة الجديدة

Current projects in the Roads lighting

-lighting Nile sat Road by 7 km PV + Led off grid

-power of 132 kw
-Number of lighting columns are 186 Double Column
- every bulb has power 110 watt

Pouring concrete & Laying of cable lines in Nile Sat

Current projects in developing environment

Preparing Shiekh Zayed to be a green sustainable city in cooperation with ministry of environment .

Financing Sides	1,200,000 L.E. Board of Trustees of Zayed 500,000 L.E. from Ministry of Environment
Procedures	Measure the different levels of noise and air measurement .. Several seminars have been made at the school & youth centers in Sheikh Zayed, to let the students know the importance of separation from the source.

Current Projects in the field of Solar Energy in the New Communities

Case Study
Towards a Green Neighborhood in Zayed

Board of Trustees in Zayed	**Zayed City**	**Ministry of Environment**	**NUCA**

Installation of quality measurements station in the 3rd district in El Sheikh Zayed

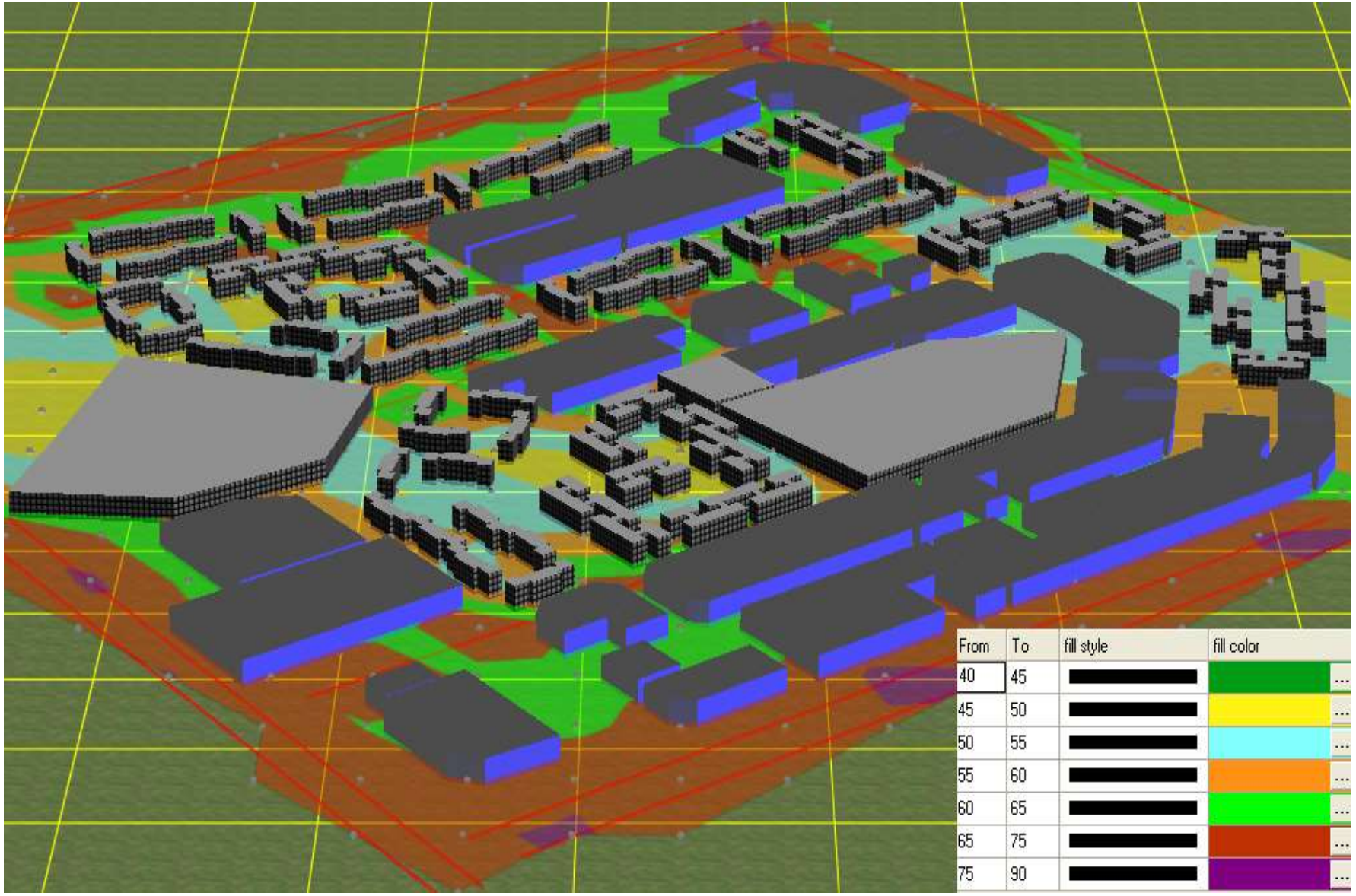
Installation of quality measurements station in the 3rd district in El Sheikh Zayed

Measuring air pollution Over two months in El Shiekh Zayed & Spread awareness among the drivers

Measuring air pollution Over two months in El Shiekh Zayed & Spread awareness among the drivers

Third Quarter noise measurement in Sheikh Zayed City

Noise Contour Map



Seminar on air quality and air pollution in the new cities

Seminar on ways to reduce noise in the new cities

Workshop on separation from the source and recycling of solid wastes at schools of Sheikh Zayed City

Current projects in developing environment

Green Corner in Shiekh Zayed city

Current Situation	Implementing the green Corner building on 120 m2 inside the environmental garden of area 2500 m2 which was built from construction wastes & installing solar energy cells to produce electricity for the building & the garden
Project's Following & Evaluation	Following & evaluation will be supervised by Ministry of Environment


وزارة البيئة
جهاز شئون البيئة
الإدارة العامة للتنمية البيئية
مدينة الشيخ زايد
جهاز مدينة الشيخ زايد
SCRE
الوحدة المركزية للمدن المستدامة
والطاقة المتجددة
هيئة المجتمعات العمرانية الجديدة
المركز الثقافى البيئى الأخضر
(مشروع حديقة البيئة)
إشراف جهاز مدينة الشيخ زايد
مقاولة شركة الأهرام للإنشاءات الحديثة


Feb 2016


Feb 2015

انشاء ركن ثقافى بيئى من نواتج الحفر بالمدينة وتركيب خلايا شمسية أعلى السطح لتوليد الكهرباء لانارة المبنى والاسوار الداخلية والخارجية


المركز الثقافى البيئى الاخضر
حديقة البيئة


02.02.2016 11:21


02.02.2016 11:24


مدينة الشيخ زايد
02.02.2016 11:41

Furniture


DELL
DELL
02.02.2016 12:51


02.02.2016 11:29


02.02.2016 11:34


Gray water Treatment Unit
04.02.2016 11:39


المسرح


عدد الخلايا : ٣٦ خلية قدرة ٣٠٠ وات.
ناتج المحطة السنوي : ١٧.٨٨ ميجا وات.
اجمالي الطاقة السنوية المستهلكة في الحملة :
١٣.٤١ ميجا وات.
الفائض السنوي : ٤.٤٧ ميجا وات.
SCRE
الطاقة المتجددة


الوحدة المركزية للمدن المستدامة
والطاقة المتجددة
SCRE
AC Power
الوحدة المركزية للمدن المستدامة
و الطاقة المتجددة
معاً.. نحو مدن خضراء مستدامه

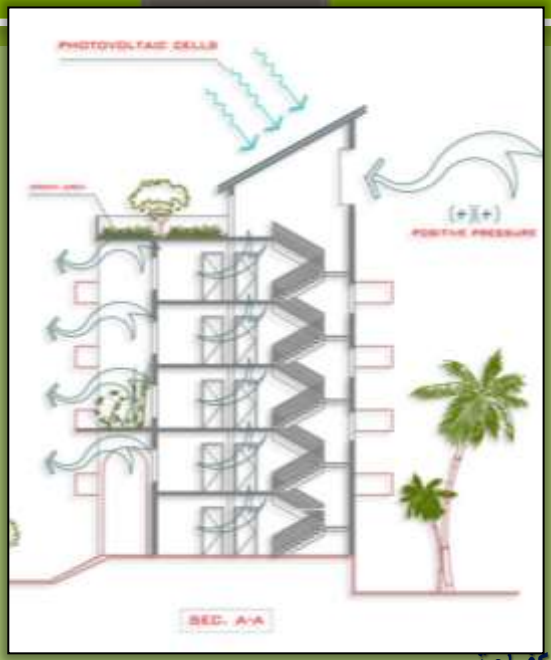
وزارة الاسكان والمرافق
والمجتمعات العمرانية الجديدة
هيئة المجتمعات العمرانية الجديدة

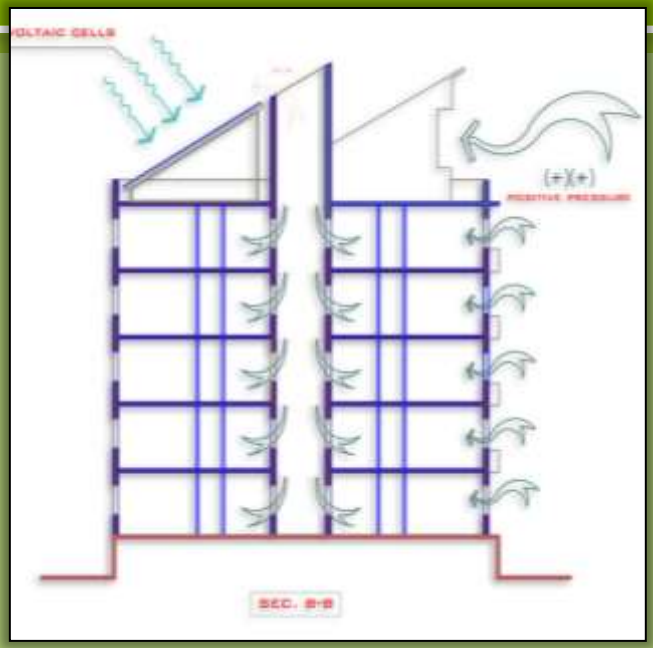
الإسكان الاجتماعى الاخضر

صور للعرض




الإسكان الاجتماعي الأخضر





- مراعاه التوجية و مسطح الفتحات و حركة الهواء وفق كود كفاءة الطاقة
- نسبة الفتحات بالواجهة
- استخدام دهانات ذات انتقالية حرارية متطابقة مع كود كفاءة الطاقة
- وضع عازل للحرارة في الاسطح
- تجميع العمارات علي حسب توصية الموقع في كل مدينة

” الحمد لله الذي هدانا لهذا و ما كنا لنهتدي لولا أن هدانا الله“

THANK YOU

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