GAM's Strategy for Sustainability(2015-2017)

Planning , zoning and developing a city that grow efficiently and achieves the requirement of sustainability

Ensuring the Implementation of Sustainability and Utilizing the Renewable Energy

GAM's Strategy for Sustainability(2015-2017)

Citizens of Amman

- Participated in preparing Jordan Green Building Guide
- Delivering An Incentives
- Green Building Implementation Guide lines

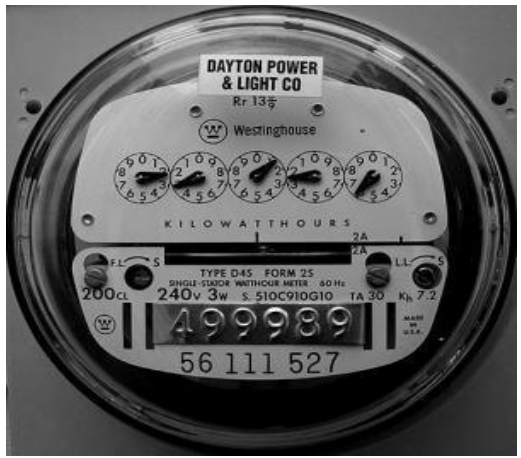
GAM's Buildings and Streets

- Solar Energy project
- Energy and Water efficiency of GAM's Building

First : GAM's Buildings and Street lights

Electrical Bill For GAM's Buildings And Street light(JD)

GAM's Bldg+ Streets lights	Al hussien theater	City Hall	HQ Bldg	Electrical Bill
6,107,624	75,391	53,818	249,052	2011
8,311,479	141,800	173,665	456,616	2012
9,571,187	147,925	138,478	706,716	2013



Solar Energy Project

Solar Energy Project

The first phase(2015) : installing PV on Roof Top of GAM's head quarter = 250KW

The Second phase (2016) : Free land Wheeling 5 MW

The Third phase (2017): Free land Wheeling 15 MW

Second : Citizens of Amman Implementing the Concept of Green Buildings

Buildings Impact on Environment(Department of statistics report -- 2008)

- Buildings consume more than 39% of the daily electricity in Jordan .
- Buildings consume annually more than 200 million cubic meter of potable water.
- Construction materials produce more than 1.8 million ton of waste.

Jordan Ecological Footprint is High






Construction Boom in Jordan(Department of statistics report --2008)

Built Areas (kingdom) (1998)	Built Areas (kingdom) (2003)	Built Areas(kingdom) (2006)
3.295million m^2	5.283 million m^2	8.371 million m^2

Building Permits(kingdom) (1998)	Building Permits(kingdom) (1998)	Building Permits(kingdom) (1998)
10,620	11,829	13,902







Jordan 's Green Buildings Guide

International green building guides (benchmarks)

LEED – BREEAM - Green mark - Dubai green codes - Estedama abu Dhabi - Qsas Qatar

Jordanian building codes
Energy efficiency building code
Thermal insulation code
Solar energy code
Water and drainage building codes
National agendas for energy , water , transport , and environment.
Renewable energy and saving energy law.
National strategy of energy saving
National strategy of water saving.

Classifications of green buildings guide

Jordan Green building levels:

Level (A)
Level (B)
Level (C)
Level (D)

MORE GREEN

- LEVEL (A)
- LEVEL (B)
- LEVEL (C)
- LEVEL (D)

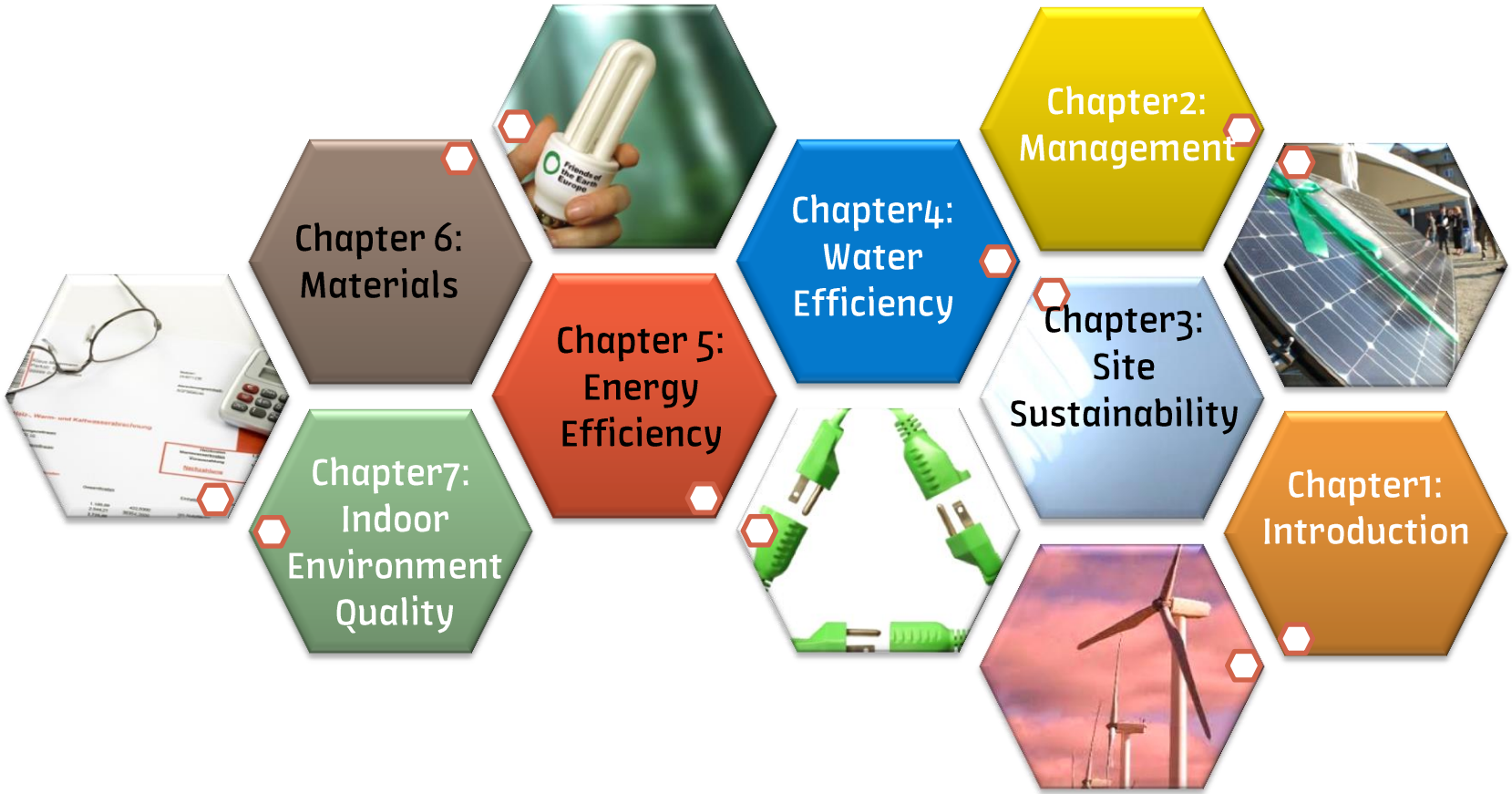
less green







Chapters of Green Buildings Guide :



Chapter1: Introduction

Contents: Green building's definition – Green buildings' guide specialists and firms – The guides' uses – Assessment system and weights.

Chapter 2: Management

Additional points = 10%

Credits number = 6

Contents: Commissioning of buildings' energy systems– Refrigerating- Exfilteration- Protection of excavation and construction work pollution- General Safety- Indoor air quality assurance through the construction phase- Indoor air quality assurance before occupation.

Chapter 3: Site sustainability

Total additional points = 10%

Credits number = 10

Contents : site selection – prevention of excavations and construction pollution – public participation– development and regeneration of polluted lands for reuse- public transportation – site development – water harvesting- heat island effects- lighting pollution- acoustic pollution.

Chapter 4: Water efficiency

Total additional points =30%

Credits number = 4

Contents : water efficient fittings– irrigation systems' efficiency in watering the landscape and green areas- Water recycling systems- General requirements for water-use efficiency.

Chapter 5: Energy efficiency

✓**Additional Points: 28%**

Credits= 9

Contents : Building envelop– HVAC- Water heating- Artificial lighting- Electrical endurance- Renewable energy- Measurement- Lefts and Escalators- CO_2 levels reduction.

Chapter 6: Materials

✓**Additional Points: 12%**

Credits= 9

Contents : Recycled materials' collection-Building's Reuse- Construction waste management- Material recycling- Recycled content- Local and regional materials- Renewable materials- Certified Wood.

Chapter7: Indoor Environment Quality

✓**Additional Points: 1%**

Credits= 10

Contents : Minimum indoor air quality- Smoking monitoring- Exfilteraion monitoring- Ventilation increment- Pollution management- Daylight- Lighting systems control- Thermal comfort design- Tgehermal comfort management systems.

Mandatory For a period of 3 years

GAM's Incentives for Green Buildings

The First incentive: Development Right and Zoning Fees

FOR ANY GREEN BUILDING PROJECT

The revenues are Collected after the Issuing the Building Permit

The collected fees and revenues are dedicated for the rehabilitation work of the infrastructures and major roads, intersections and bridges.

The Development Rights and Zoning fees are collected according to law of organizing cities and Villages – Article 47, 53

Type of the facilitate :

❑ *Installment of Total Amount of Zoning and Development Rights for Any green project up 5-6 years*

The Second Incentive -----<<One Stop shop>>

FOR ANY GREEN BUILDING PROJECT

✓Informing the Applicant step by step for the progress

✓Coordinating With JEA, Civil Defense, And Police

✓Fast Track during Technical Auditing of the drawing (Account Executive).

Objectives :

- ❑Minimizing Time and Motion of the Applicant
- ❑Minimizing Cost for Follow up for the Applicant
- ❑Hiring dedicated account executives to revise the compliance of the submitted documents with Jordan green building standards.

Stakeholders

- Telecom company (Orange).
- Meyahouna.
- Department of Antiquities.
- Electricity company.
- Civil Defense.
- Jordan Engineers Association (JEA).
- Ministry of Environment.
- Ministry of Agriculture.
- Ministry of Tourism.
- District Committees and Regional Committee.
- Master Plan.

The Third Incentive: Utilizing the Roof Top and Parking for installing PV

FOR ANY GREEN BUILDING PROJECT OR Conventional Building

Installing the PV panels on Roof Top and on top of covered parking without any fees

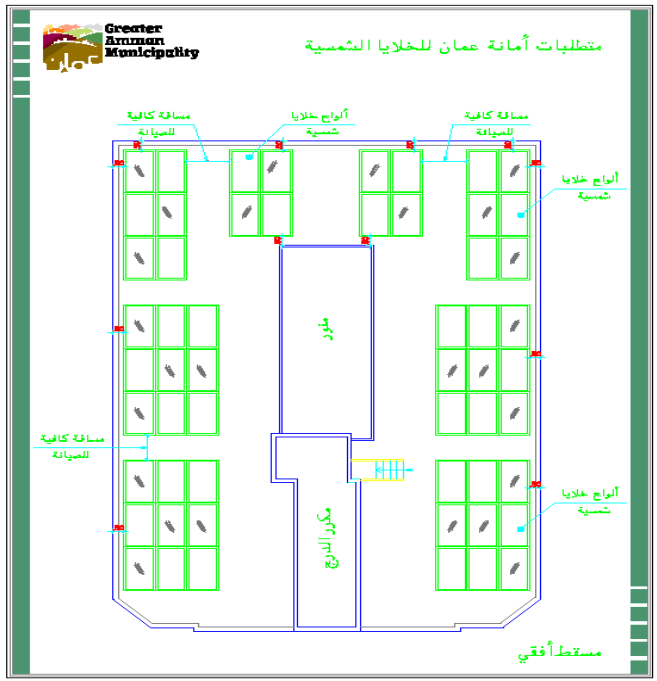
OBJECTIVES :

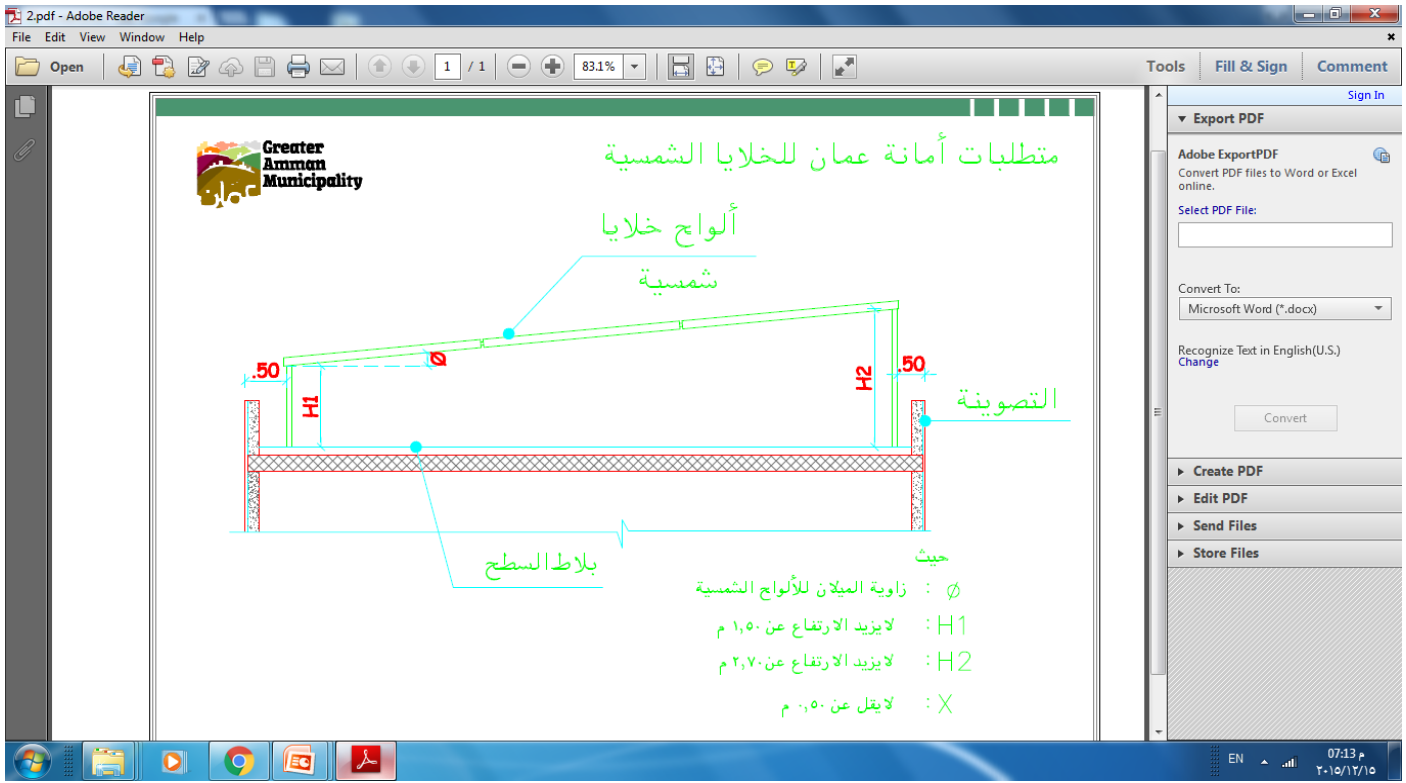
- Implementing the Concept of Renewable Energy

Regulation of Installing PV panels on Roof Top, covered and uncovered Parking on free lands

The Applicant Must Submit the following Documents

- Ownership of Rooftop, the free land OR no objection letter from shared owners
- Occupancy Permit from GAM
- Covered letter for GAM
- Undertaking letter stamped by Court To Ensure the Safety of Installation for PV panels and steel structure Foundations
- Details Drawing for location, setbacks and elevation of the structure


Greater Amman Municipality
متطلبات أمانة عمان للخلايا الشمسية
مسافة كافية للصيانة
ألواح خلايا شمسية
مسافة كافية للصيانة
ألواح خلايا شمسية
منور
مسافة كافية للصيانة
مكرر الدرج
ألواح خلايا شمسية
مسقط أفقي


2.pdf - Adobe Reader
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Sign In
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Convert PDF files to Word or Excel online.
Select PDF File:
Convert To:
Microsoft Word (*.docx)
Recognize Text in English(U.S.)
Change
Convert
Create PDF
Edit PDF
Send Files
Store Files
Greater Amman Municipality
متطلبات أمانة عمان للخلايا الشمسية
ألواح خلايا شمسية
.50
H1
H2
.50
التصوينة
بلاط السطح
حيث
∅ : زاوية الميلان للألواح الشمسية
H1 : لايزيد الارتفاع عن ١,٥٠ م
H2 : لايزيد الارتفاع عن ٢,٧٠ م
X : لايقل عن ٠,٥٠ م
EN
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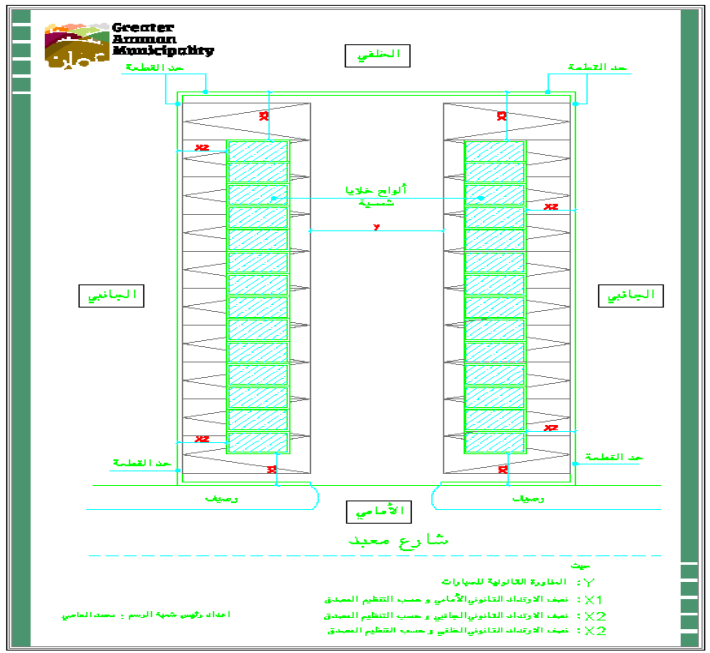
٢٠١٥/١٢/١٥


Greater Amman Municipality
الخلفي
حد القطعة
حد القطعة
ألواح خلايا شمسية
الجانبي
الجانبي
حد القطعة
حد القطعة
رصيف
رصيف
الأمامي
شارع محيد
حيث
Y : الخاورة القانونية للسيارات
X1 : نصف الارتداد القانوني الأمامي و حسب التنظيم المصدق
X2 : نصف الارتداد القانوني الجانبي و حسب التنظيم المصدق
X2 : نصف الارتداد القانوني الخلفي و حسب التنظيم المصدق
اعداد ورقيص شمية الرسم : محمد العاسي

مقطع رأسي لإرتفاع الألواح الشمسية عن سطح الأرض نموذج رقم ٣.pdf - Adobe Reader

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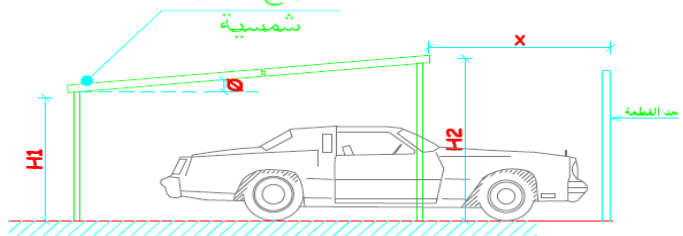
Greater Amman Municipality

متطلبات أمانة عمان للخلايا الشمسية

ألواح خلايا شمسية



حيث

Ø : زاوية الميلان للألواح الشمسية

H1 : لايزيد الارتفاع عن ٢,٥٠ م

H2 : لايزيد الارتفاع عن ٣,٢٥ م

X : نصف الارتداد القانوني و حسب التنظيم المصدق

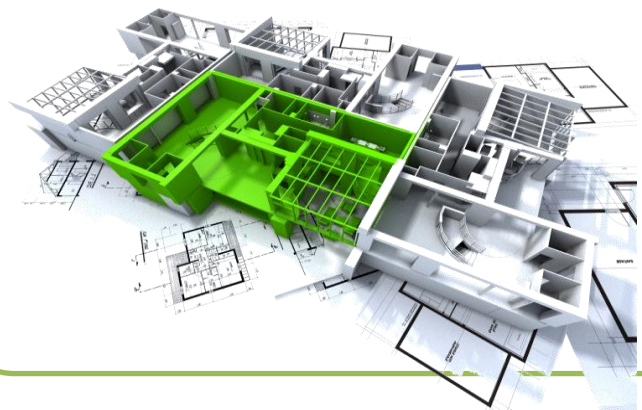
اعداد رئيس شعبة الرسم : محمد الماضي

EN 07:21 م ٢٠١٥/١٢/١٥

T he Fourth Incentive : Density Bonus

FOR ANY GREEN BUILDING PROJECT Comply with Jordan Green Building Guide

Density Bonus : Additional Percentage to original Floor Area Ratio (FAR)



Objective:

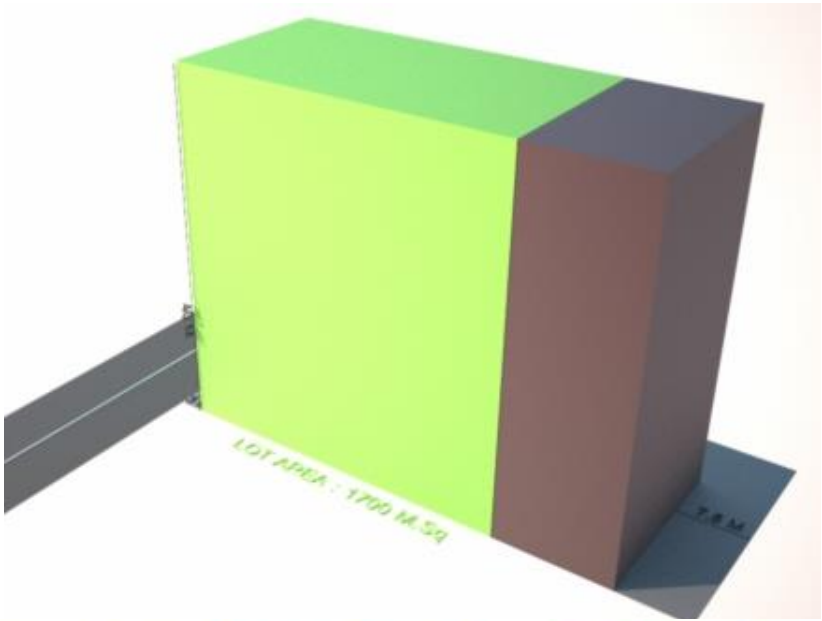
Compensate the owner from Extra capital cost from the implementation of Green Building

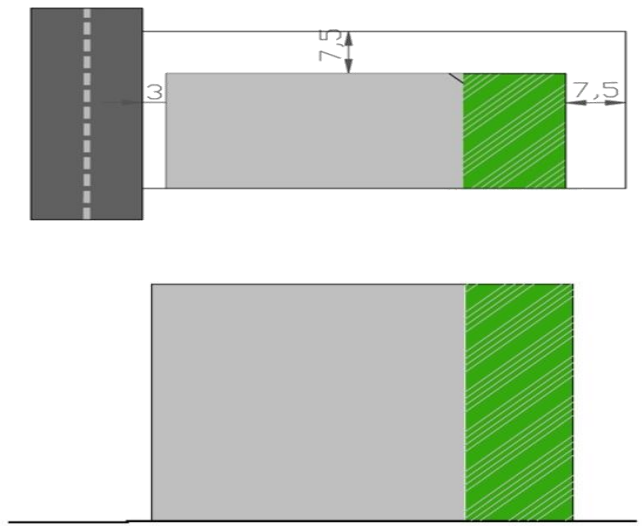
Density Bonus

Level	Bonus
A	10%
B	15%
C	20%
D	25%







LOT AREA : 1700 M.SQ
7.5M


7.5
3
7.5

Equation of Calculating Density Bonus

Built area* = (original FAR+D.B) x PLOT AREA

Density bonus area (sq.m.) = the built up area* - the original built up area

Density Bonus Area (m2)					Zoning					Minimum Plot Area	Zoning
A	B	C	D	Typical Floor area (m2)	Rear	Side 2	Side 1	Front	Plot %		
250	200	150	100	٣٩٠	7	5	5	5	39%	1000	Residential A
187.5	150	112.5	75	٣٣٧.٥	6	4	4	4	45%	750	Residential B
325	260	195	130	٧١٥	7.5	0	5	3	55%	1300	Mixed Used
425	340	255	170	٧٦٥	7.5	5	5	6	45%	1700	

Thank You