

**THE 18<sup>TH</sup> ASIACONSTRUCT CONFERENCE**  
**SINGAPORE-COUNTRY REPORT**

*Prepared by*  
**BUILDING AND CONSTRUCTION AUTHORITY**  
**SINGAPORE**

**EXECUTIVE SUMMARY**

Weighed down by uncertain global economic outlook owing to the escalation of Euro crisis and slowing growths in US and China, the Singapore economy grew by 1.7% in the first half of 2012, a further moderation from the 4.9% growth in 2011. Amid the slowdown in most economic sectors, the construction sector emerged as the star performer with growth averaged about 6.1% in the first half of this year, underpinned by the increased on-site construction activities stemming from the high volume of construction demand last year. Against the challenging external macroeconomic backdrop, the growth outlook for the Singapore economy remains cautious, with an official projected growth rate of between 1.5% and 2.5% for the whole year 2012.

Total construction demand<sup>1</sup> in 2011 increased by 28% year-on-year to \$35.2 billion<sup>2</sup>. The public sector construction demand was boosted by the ramp-up in public housing projects and Mass Rapid Transit (MRT) Downtown Line Stage 3 contracts while the private sector construction demand was buoyed by robust residential developments amid strong buying momentum as well as stronger industrial building developments. On the back of the abundant domestic project opportunities coupled with weaker external environment, both Singapore contractors and consultants were less active in overseas ventures in 2011.

For 2012, total construction demand is projected to moderate to between \$22 billion and \$28 billion. While the public sector demand is anticipated to slow down from last year's level partly on account of a high statistical base boosted by strong MRT construction demand, construction demand from the private sector is expected to stay at a relatively strong level.

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<sup>1</sup>Construction demand is measured by total value of contracts awarded which exclude reclamation projects.

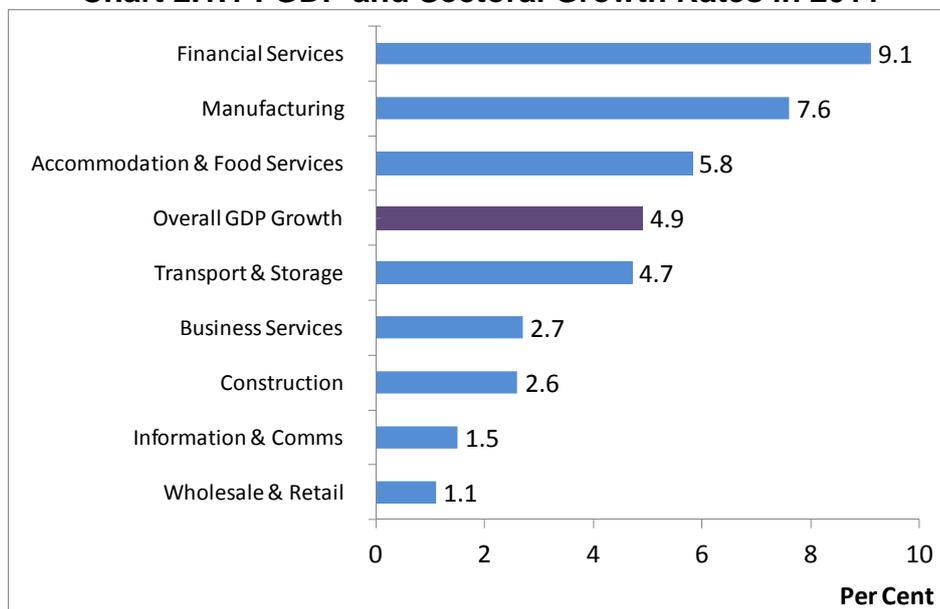
<sup>2</sup> All currencies stated in this paper are in nominal Singapore dollars unless otherwise stated.

## 2.1 Macro Economic Review and Outlook<sup>3</sup>

### 2.1.1 Overview of the Singapore Economy in 2011

In 2011, the Singapore economy expanded by 4.9%, slower than the extraordinary growth of 14.8% in 2010. Nonetheless, the expansion was broad-based across all sectors of the economy with the Financial Services posting the highest growth of 9.1% (Chart 2.1.1). In comparison, the construction sector expanded by a relatively lower 2.6% in 2011, as a result of the moderation in the total value of construction contracts awarded in the aftermath of the global financial crisis in 2009.

**Chart 2.1.1 : GDP and Sectoral Growth Rates in 2011**



### 2.1.2 Economy in the First Half of 2012

The Singapore economy registered a modest growth of about 1.7% in the first half of 2012, affected by the lingering global economic uncertainties. Nevertheless, the growth of construction sector averaged about 6.1% in the first half, backed by the high volume of construction demand last year.

Taking into account the sluggish economic performance in the first half and the anticipated subdued global economic climate in the second half, the Ministry of Trade and Industry (MTI) expects the Singapore economy to grow by 1.5% to 2.5% in 2012.

<sup>3</sup> Source: Economic Survey of Singapore, second quarter 2012, Ministry of Trade and Industry Singapore.  
Page 2 of 10

### 2.1.3 Main Economic Indicators

Year	2008	2009	2010	2011
<b>GDP and Components</b>				
GDP at real prices (Base Year=2005) (S\$Million)	251,374	248,911	285,659	299,625
GDP at current market prices (S\$Million)	268,772	270,013	310,037	326,832
GDP growth (%)	1.7	-1.0	14.8	4.9
Manufacturing sector (Base Year=2005) (S\$Million)	60,739	58,218	75,493	81,236
% growth	-4.2	-4.2	29.7	7.6
Wholesale & Retail Trade Sector (Base Year=2005) (S\$Million)	41,807	39,860	45,896	46,414
% growth	3.2	-4.7	15.1	1.1
Transport & Storage Sector (Base Year=2005) (S\$Million)	25,082	22,588	24,367	25,509
% growth	5.1	-9.9	7.9	4.7
Financial Services (Base Year=2005) (S\$Million)	29,581	30,224	33,960	37,038
% growth	5.2	2.2	12.4	9.1
Business Services (Base Year=2005) (S\$Million)	28,383	29,216	31,036	31,875
% growth	7.3	2.9	6.2	2.7
Construction sector (Base Year=2005) (S\$Million)	8,975	10,509	10,918	11,206
% growth	20.1	17.1	3.9	2.6
<b>Demographic Indicators</b>				
Population – Singapore Residents <sup>1</sup> (‘000)	3,642.7	3,733.9	3,771.7	3,789.3
Population growth rate (%)	1.7	2.5	1.0	0.5
Total labour force (‘000)	2,939.9	3,030.0	3,135.9	3,237.1
Labour force growth rate (%)	8.5	3.1	3.5	3.2
Unemployment rate (%) – Seasonally adjusted as in June	2.2	3.2	2.2	2.1
<b>Financial Indicators</b>				
Savings deposits (%) (Average quotes from 10 leading banks)	0.22	0.15	0.13	0.11
Prime lending rates (%) (Average quotes from 10 leading banks)	5.38	5.38	5.38	5.38
Changes in consumer price index (Base period = 2009, % change over previous year)	6.6	0.6	2.8	5.2
Annual average exchange rate with \$US (S\$ Per US\$)	1.4148	1.4545	1.3635	1.2579

Sources: Yearbook of Statistics Singapore 2012, Department of Statistics, Ministry of Trade and Industry

<sup>1</sup>Singapore resident population comprises Singapore citizens and permanent residents.

### **3.1 Overview of the Singapore Construction Industry (Table 3.1.1)**

#### **3.1.1 Construction Demand Review for 2011**

Construction demand continued the strong growth since emerging from the effects of the global financial crisis in 2009. The construction demand in 2011 increased by 28% over the year to \$35.2 billion. The public sector construction demand almost doubled year-on-year from \$8.5 billion in 2010 to \$15.2 billion in 2011, due to ramp-up in public housing projects and construction of MRT Downtown Line Stage 3.

Construction demand from the private sector remained unabated in spite of global uncertainties, registering a 5.0% increase year-on-year to \$20 billion in 2011. The high private sector volume was bolstered by the stronger residential developments supported by upbeat buying momentum in residential launches as well as firmer industrial and commercial building construction demands buoyed by the erection of various major utilities plants and iconic office developments.

#### **3.1.2 Construction Demand Forecast for 2012**

Based on the latest feedback from developers and public sector agencies on their development plans as well as the performance in the first half of the year, total construction demand is anticipated to reach \$22 billion to \$28 billion in 2012. While public sector construction demand is expected to moderate to between \$9 billion and \$11 billion due to high base last year, total private sector construction demand is forecast to reach a relatively firm level of between \$13 billion and \$17 billion.

#### **Residential Construction Demand**

Total public housing construction demand is projected to be \$3.5 billion to \$4.3 billion, lower than the peak in 2011 but still higher than the average \$2.8 billion in 2009-10. Private residential construction demand is also projected to drop from the record high of \$9.1 billion in 2011 to between \$5.1 billion and \$7.3 billion in 2012, moderated by the cloudy global economic outlook. Nevertheless, this level is still remarkably stronger than the \$2 billion to \$3 billion yearly private residential construction demand posted during the period from 1998 to 2005.

## Commercial Construction Demand

Despite a moderation from the high volume last year, total commercial construction demand in 2012 is projected to sustain at between \$2.5 billion and \$3.0 billion on the back of Singapore's pro-business environment and thriving visitor arrivals.

## Industrial Construction Demand

With businesses wary of global market volatility, demand for conventional industrial space is expected to stay lukewarm in 2012. Total industrial construction demand in 2012 is projected to slow down to between \$3.4 billion and \$4.2 billion.

## Institutional & Other Building Construction Demand

Total institutional & other building construction demand is anticipated to improve to between \$4.1 billion and \$5.3 billion in 2012, mainly underpinned by more public institutional building projects such as healthcare facilities and educational buildings earmarked for construction this year.

## Civil Engineering Construction Demand

Although no construction tender is expected to be awarded for new major MRT line in 2012, the remaining contracts for Mechanical & Electrical (M&E) works for Tuas West MRT Extension, various road expansions by the Land Transport Authority (LTA) and two underground transmission cable tunnel construction by Singapore Power are likely to sustain a healthy level of infrastructure construction demand at between \$3.4 billion and \$3.9 billion in 2012.

Table 3.1.1: Breakdown of Construction Demand

### Contracts Awarded (2008 to 2012) (excluding Reclamation Works)

	2008	2009	2010	2011	2012 Forecast	
	(in \$m)				(in \$b)	
<b>Both Sectors</b>	<b>35,684.05</b>	<b>22,518.38</b>	<b>27,564.59</b>	<b>35,229.26</b>	<b>22.0</b>	<b>- 28.0</b>
Building Work	27,065.86	13,499.06	24,541.18	28,512.50	18.6	- 24.1
<i>Residential</i>	11,073.60	6,733.87	11,487.03	15,307.39	8.5	- 11.6
<i>Commercial</i>	8,455.54	1,649.82	3,236.83	4,197.60	2.5	- 3.0
<i>Industrial</i>	3,741.10	2,040.48	4,789.69	6,028.43	3.4	- 4.2
<i>Institutional &amp; Others</i>	3,795.62	3,074.89	5,027.63	2,979.08	4.1	- 5.3
Civil Engineering Work	8,618.19	9,019.32	3,023.41	6,716.76	3.4	- 3.9

Source : BCA as at 16 August 2012

### 3.2 Construction Companies (Table 3.2)

The total number of companies registered under BCA Contractors Registry lowered from the historical peak last year to 9,086 as at end June 2012. Of these, 84 firms were A1 contractors with unlimited tendering limit for public sector projects.

Table 3.2: Trend of Registered Contractor

Year (calendar)	2008	2009	2010	2011	2012*
No. of registered contractors	7021	7975	8827	9573	9086

Note: Firm with multiple workheads registered is considered as a single registered entity.

\*No. of registered contractors as at 30 June 2012

### 3.3 Construction Manpower

Growth momentum of construction employment continued on account of the sustained level of on-site construction activity. According to the latest employment statistics released by the Ministry of Manpower (MOM), construction employment grew by 18,400 in the first half of 2012 to 421,000 as at June 2012. Moving forward, the robust private sector construction activity, sizeable infrastructure construction demand as well as increasing awareness towards environmental sustainability will continue to provide appealing job opportunities as well as higher demand for more green professionals in the construction industry over the next few years.

### 3.4 Construction Costs

#### 3.4.1 Tender Price Index

Despite the industry's feedback of general inflation due to higher wages and preliminaries overheads as well as the significantly stronger construction demand, tender prices remained competitive with contractors actively seeking to fill their order books in 2011. The competitive pricing was evident from the average yearly BCA Building Works Tender Price Index<sup>4</sup> (TPI) in 2011 at 114.1 which remained close to 2010's level.

<sup>4</sup> BCA TPI (base year 2005=100) excludes piling works, sub-structure works and mechanical & electrical works as these cost items are either project specific or not feasible to compile due to lack of data.

The TPI increased about 0.8% quarter-on-quarter to 114.2 in the second quarter of 2012, supported by higher tender prices for public housing contracts, private non-landed residential and commercial office buildings as a result of general cost inflationary pressures including higher labour costs.

### **3.4.2 Average Construction Material Prices (Table 3.4.2)**

#### **Concrete**

Backed by the higher volume of structural work activities stemming from more projects commencing construction in 2011, demand for ready-mixed concrete rose by 13% year-on-year to 11.6 million m<sup>3</sup>. In view of the projected higher construction output this year, the estimated demand for concrete is likely to increase by 6.8% to 12.4 million m<sup>3</sup> in 2012. With keen market competition, the average market price of Grade 40 pump ready-mixed concrete<sup>5</sup> stayed steady at \$108 per m<sup>3</sup> in December 2011 despite the increased demand in 2011.

#### **Reinforcement Bars (Rebars)**

The strong construction demand and suppliers' step-up in steel purchase to counter price volatility led to a year-on-year increase of 30% in rebar demand<sup>6</sup> to about 1.27 million tonnes in 2011. Demand for steel rebars in 2012 is estimated to sustain at around 2011's level. The healthy regional demand coupled with higher raw material and production costs pushed the average market price of rebar<sup>7</sup> to above \$900 per tonne in 2011. Towards the end of 2011, the average steel rebar price lowered from \$922 per tonne in November 2011 to \$913 per tonne in December 2011, in tandem with the softening international prices amid pessimistic global economic outlook which took a toll on prices of raw materials and finished steel products.

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<sup>5</sup> The market prices are based on contracts with non-fixed price, fixed price and market retail price

<sup>6</sup> Demand for steel rebar is measured in terms of local production and net imports.

<sup>7</sup> The prices refer to 16mm to 32mm High Tensile rebar (without cut and bend) and are based on fixed price supply contracts with contract period 6 months or less.

Table 3.4.2: Basic Construction Materials

Demand				
Year	Ready-Mixed Concrete (Mil m <sup>3</sup> )	% Change	Steel Rebars (Mil tonnes)	% Change
2010	10.25	-	0.98	-
2011	11.61	13%	1.27	30%
2012 (f)	12.40	6.8%	1.30	2.4%
Current Market Prices				
Year	Ready-Mixed Concrete (Grade 40 Pump) (\$ per m <sup>3</sup> )	% Change	Steel Rebars (16-32mm) (\$ per tonne)	% Change
Dec 2010	\$106.7	-	\$867.5	-
Dec 2011	\$108.0	1.2%	\$913.4	5.3%

f: Forecast

### 3.4.3 Construction Industry Salaries and Wages

The average monthly earnings per employee in the construction industry increased by about 5% in 2011, slightly lower than the 6% increase for the national average. Compared to most other major economic sectors, the average monthly earnings per employee in the construction industry remained relatively lower (Table 3.4.3).

Table 3.4.3: Average Monthly Earnings Per Employee (S\$ per month)

Industry	2008	2009	2010	2011
Average	3,977	3,872	4,089	4,334
Manufacturing	3,955	3,966	4,263	4,484
<b>Construction</b>	<b>2,861</b>	<b>2,948</b>	<b>3,113</b>	<b>3,268</b>
Wholesale and Retail Trade	3,441	3,418	3,546	3,758
Transport and Storage	3,989	3,914	3,953	4,222
Hotels & Restaurants	1,504	1,463	1,506	1,546
Information & Communications	5,304	5,253	5,338	5,604
Financial Services	7,153	6,890	7,656	8,170
Retail Estate and Leasing Services	3,513	3,273	3,051	3,380
Community, Social & Personal Services	4,168	3,857	4,292	4,604

Source: Yearbook of Statistics Singapore, 2011, Report on Wages Singapore 2011

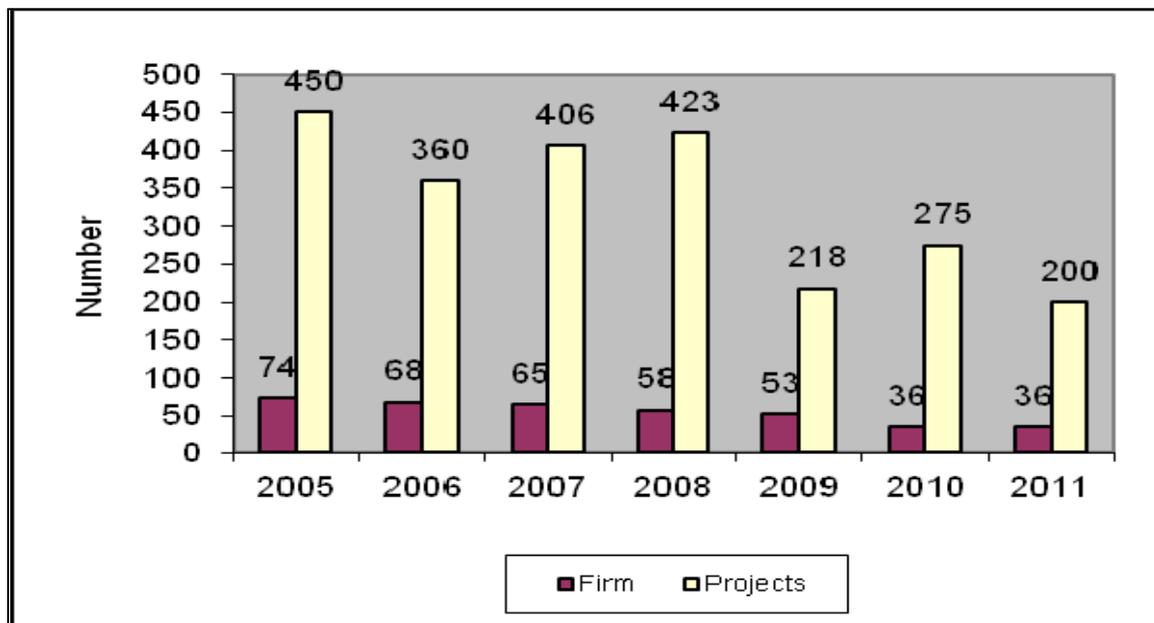
## 4.1 Overseas Performance Of Singapore’s Consultants and Contractors in 2011

Given the significantly larger domestic construction market, coupled with reduced business opportunities overseas as a result of global economic uncertainties, it is observed that Singapore consultants and contractors were less active in participating in overseas projects in the last two years.

### 4.1.1 Exports By Consultants (Chart 4.1.1)

Compared with the number of projects clinched by Singapore companies in the period from 2005 to 2008, Singapore firms experienced a sharp decline in their overseas consultancy projects, a drop of nearly 45% to an average of 231 projects annually from 2009 to 2011. The number of firms in overseas consultancy services also declined by about 50% from 74 in 2005 to 36 in 2011.

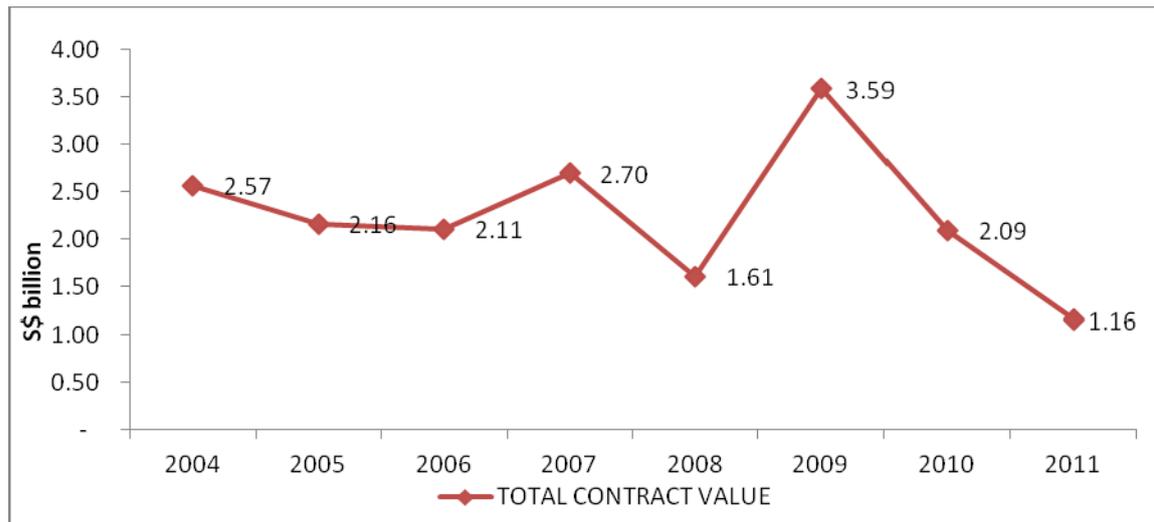
Chart 4.1.1: Number of Consultancy Firms and Projects, 2005 - 2011



### 4.1.2 Exports By Contractors (Chart 4.1.2)

Singapore construction and engineering firms clinched S\$1.16 billion worth of overseas contracts in 2011. After registering the peak volume of S\$3.61 billion in 2009, construction exports fell by 42% in 2010 to S\$2.09 billion and fell further by another 45% to S\$1.16 billion in 2011.

Chart 4.1.2 : Value of Construction Exports by Singapore Firms, 2011



## 5.1 Conclusion

Singapore economy grew by 2.0% year-on-year in the second quarter<sup>8</sup>, up from the 1.5% growth in the preceding quarter. The construction sector remained the key engine of growth and posted the highest expansion among all economic sectors in the first half of 2012. Given the volatile global environment, the growth outlook for the Singapore economy remains cautious. MTI expects Singapore GDP growth to reach 1.5%-2.5% in 2012, barring any unforeseen shock.

Over the medium-term, the outlook for Singapore construction industry is positive in view of the Government's plan to invest and upgrade essential infrastructure to improve the built environment and Singapore's attractiveness as a safe haven to draw in private construction investments. Based on BCA's preliminary projection, the average construction demand is likely to sustain at between \$19 billion and \$27 billion per annum<sup>9</sup> in 2013 and 2014.

<sup>8</sup> Released by the Ministry of Trade and Industry (MTI) Singapore on 10 Aug 12

<sup>9</sup> This forecast will be fine-tuned again in January 2014.

Thank You



**JANUARY 2012**

SUN	MON	TUE	WED	THU	FRI	SAT
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8	9	10	11	12	13	14
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22	23	24	25	26	27	28
29	30	31				



Green & Gracious Builder Scheme

**Outline**

- Overview
- Scheme Objectives
- The Building Process
- Assessment of the Scheme
- Incentives
- Green Mark Rating Scale



**JANUARY 2012**

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**Incentives**

- Construction Productivity & Capability Fund
- Green Mark Version 4
- GRS as an evaluative criterion during PGN for tender evaluation



**MARCH 2012**

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**Objectives of GRS:**

- to share knowledge the profession on the current concepts of GRS.
- to support our efforts to high a national building standard.

Thank You



**JANUARY 2012**

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**Green & Gracious Builder Scheme**

We share a safe, high quality, sustainable and green built environment.



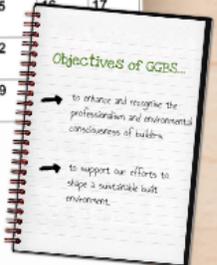
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# Green & Gracious Builder Scheme



We shape a **safe**, **high quality**, **sustainable** and **friendly** built environment.

RY 2012

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# Outline

- Rationale
- Objective
- Overseas Examples
- Key Features of Scheme
- ASSESSMENT Criteria
- Examples of Best Practices
- Incentives for Builders
- Green and Gracious Builder Guide

All key players have a critical role to play to make environmental sustainability a success.

Green Mark Scheme has taken off successfully with strong support from developers, architects & engineers.

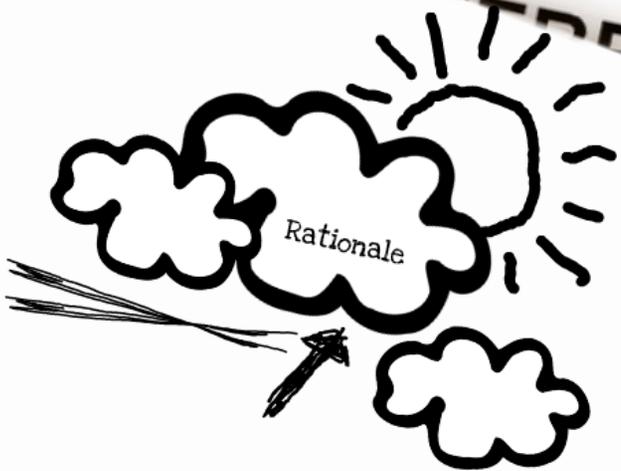


BCA GREEN MARK

Green & Gracious Builder Scheme recognises the builder's contribution towards environmental sustainability.



GREEN AND GRACIOUS BUILDER Award



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MARCH



All key players have a  
critical role to play to  
make environmental  
sustainability a success.

Green Mark Scheme has taken  
off successfully with strong  
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BCA GREEN MARK



Green & Gracious Builder  
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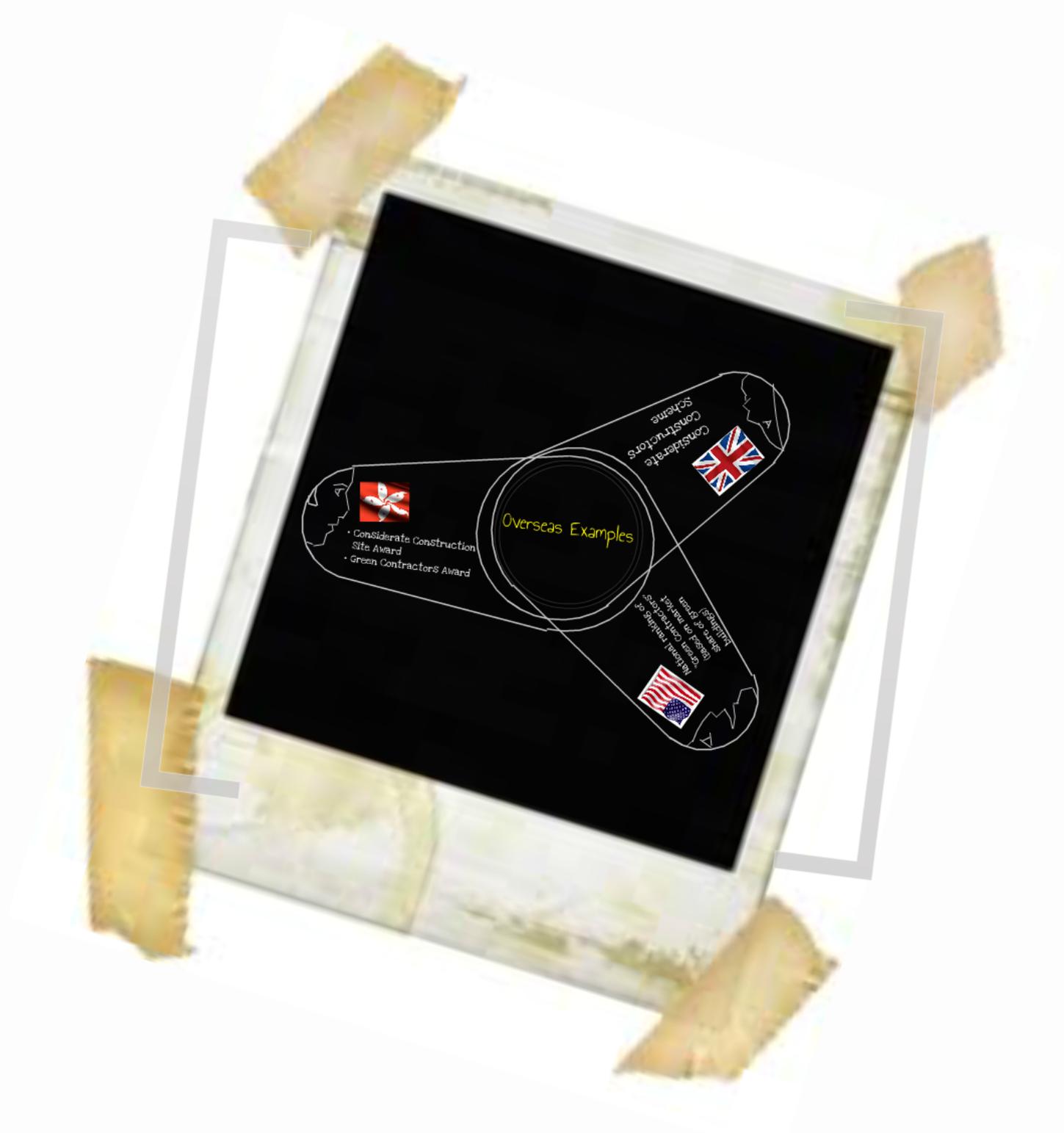
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## Objectives of GGBS...

→ to enhance and recognise the professionalism and environmental consciousness of builders.

→ to support our efforts to shape a sustainable built environment.



Overseas Examples

Considerate Constructors Scheme



Considerate Construction Site Award  
Green Contractors Award

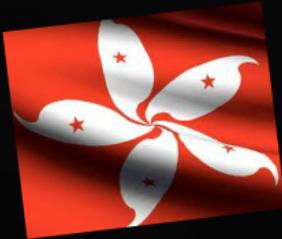
National Institute of Building Trades of America



# Overseas Examples

Considerate  
Constructors  
Scheme

# Overseas Examples



- Considerate Construction Site Award
- Green Contractors Award

Ranking of  
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Considerate  
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Overseas Examples

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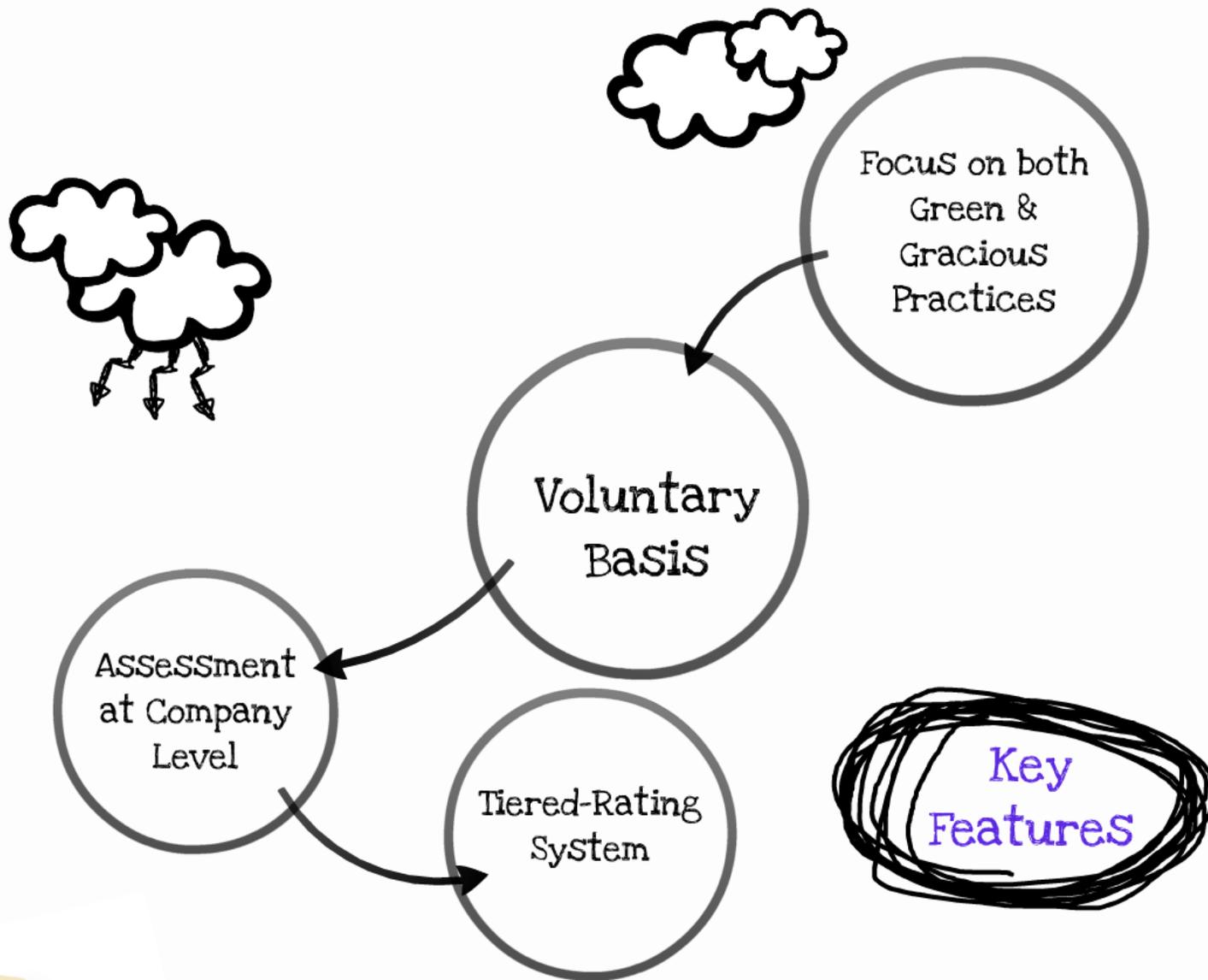
National ranking of  
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(Based on market  
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buildings)

Overseas Examples



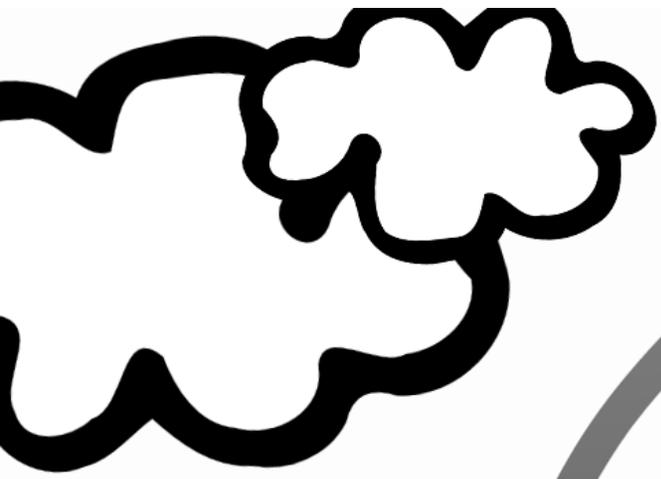
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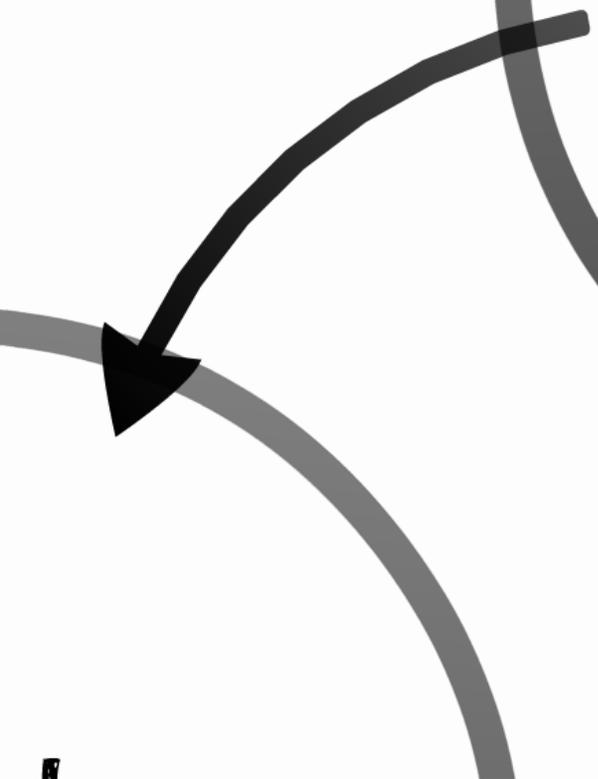


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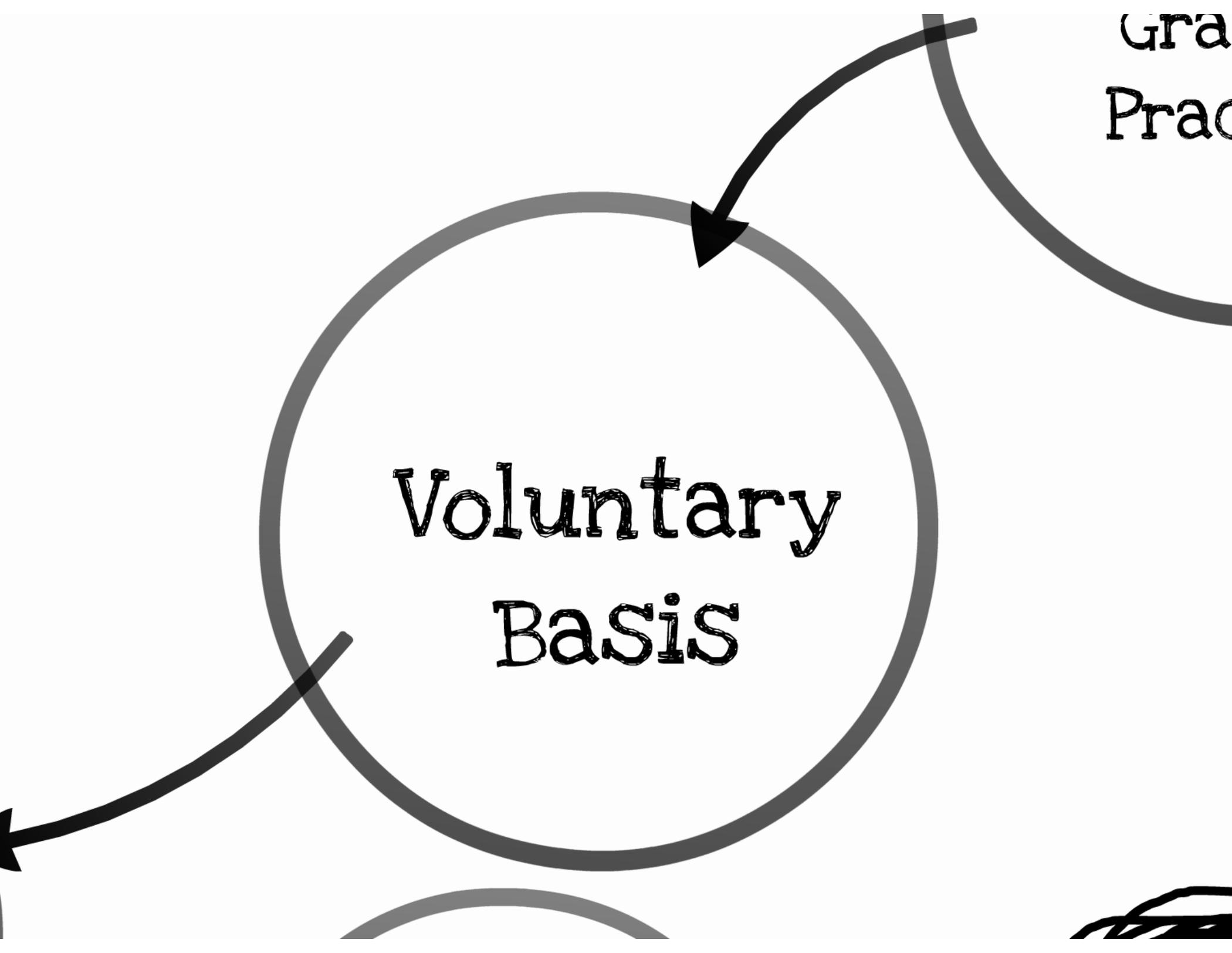


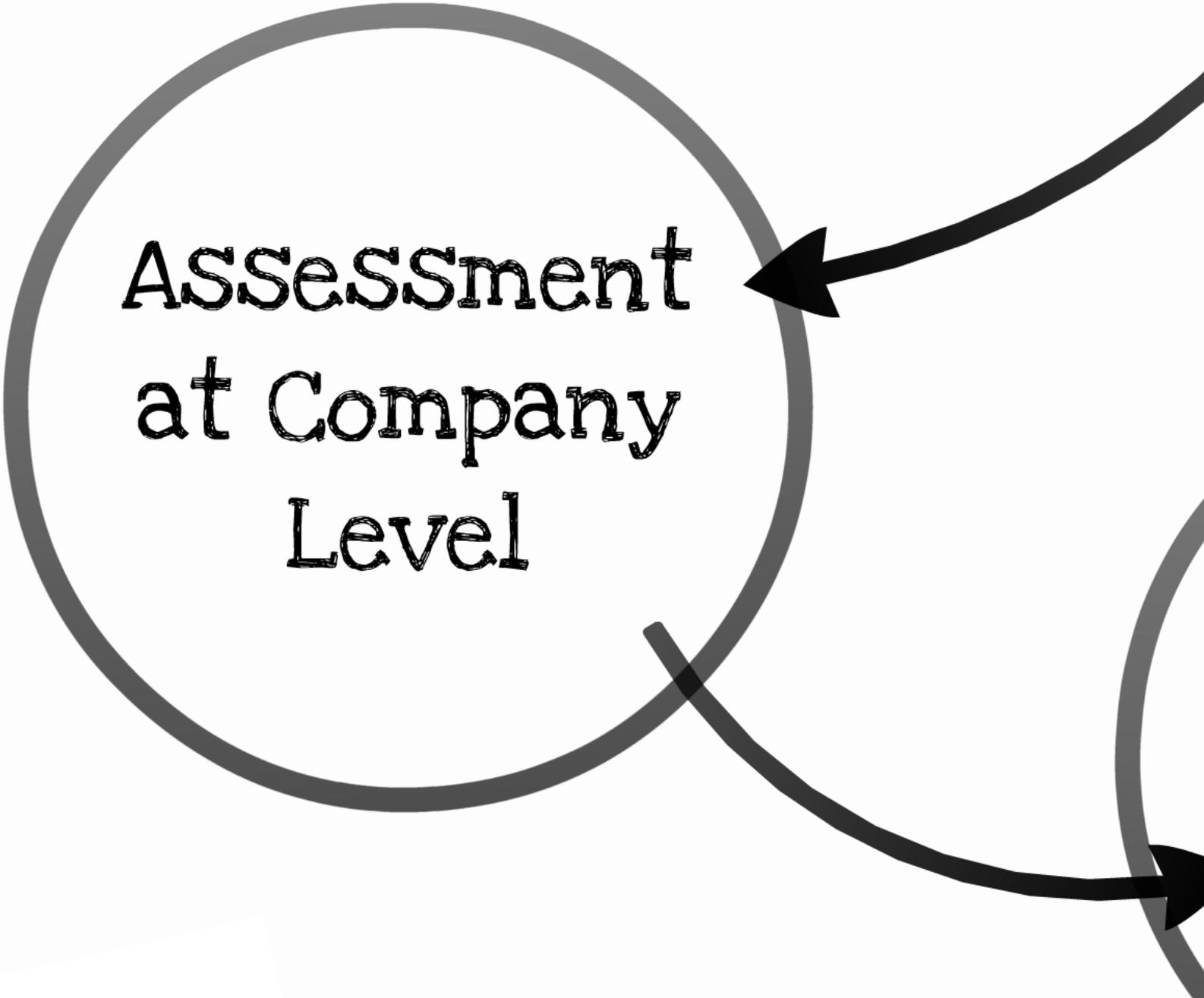
Focus on both  
Green &  
Gracious  
Practices



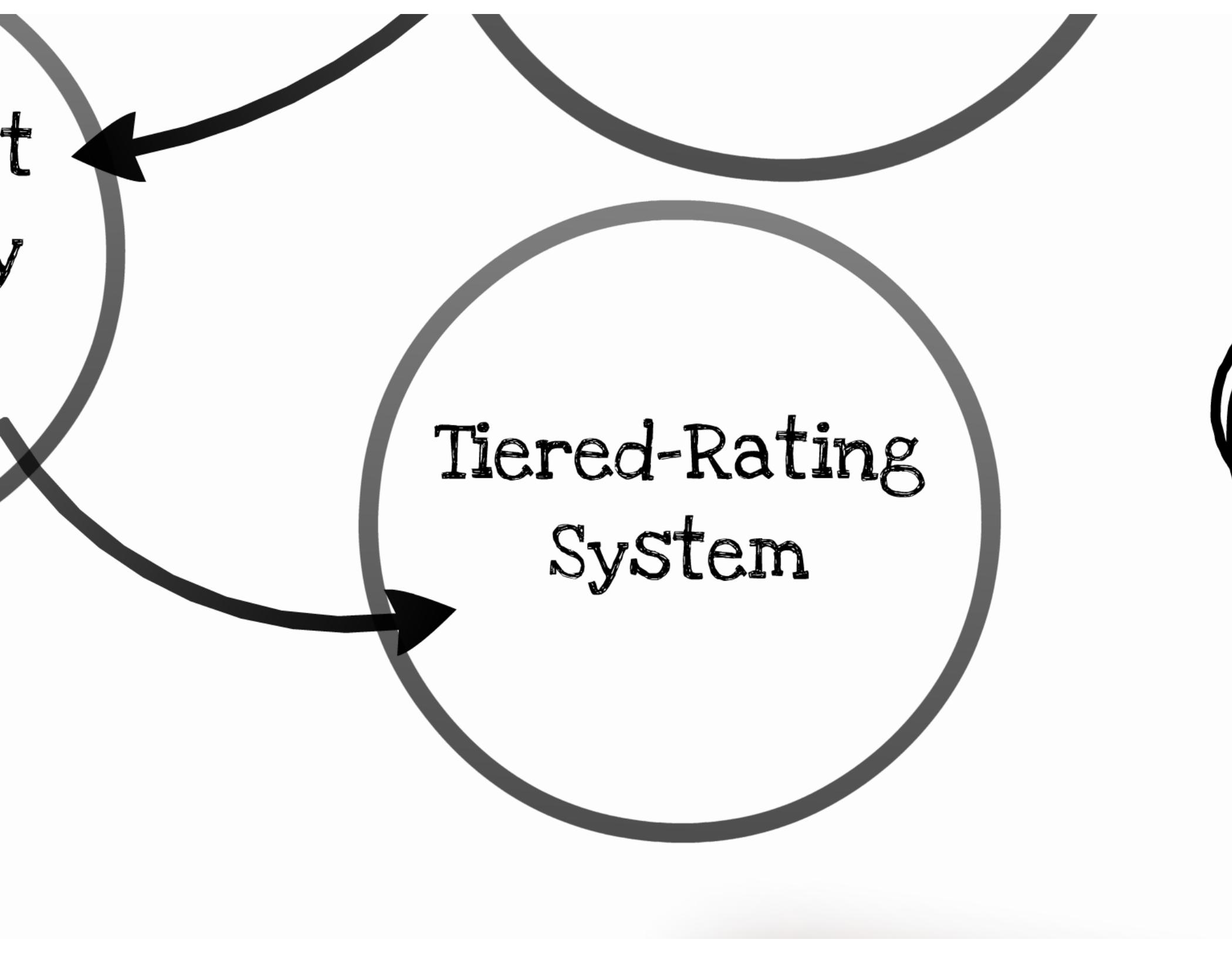
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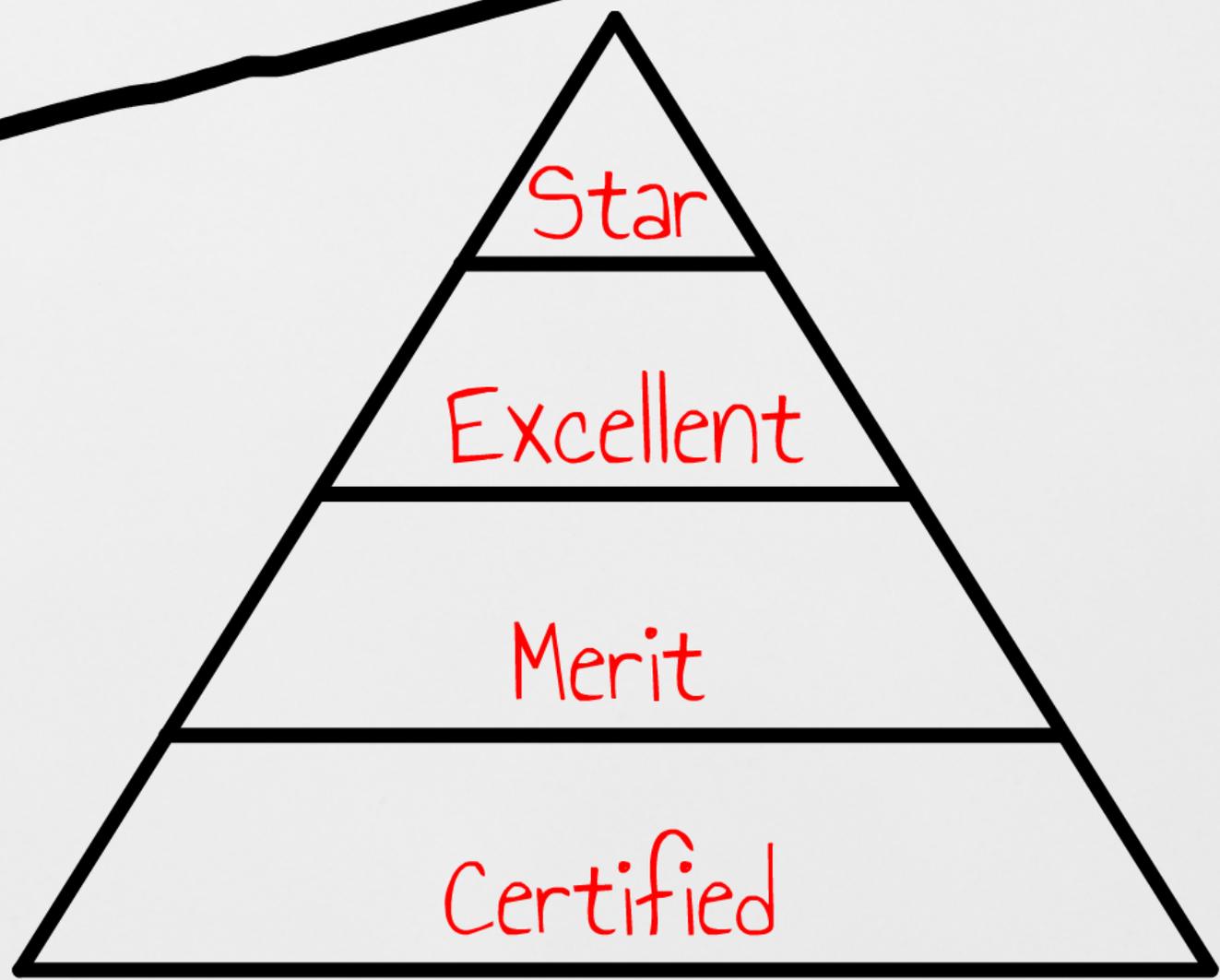




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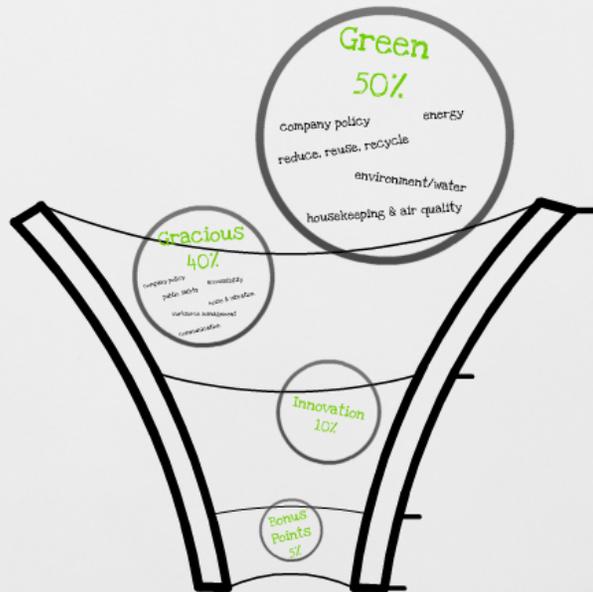


Star

Excellent

Merit

Certified



## ASSESSMENT CRITERIA

Green

50%

company policy

energy

reduce, reuse, recycle

environment/water

housekeeping & air quality

acious

40%

accessibility

safety

noise & vibration

Gracious

40%

company policy

accessibility

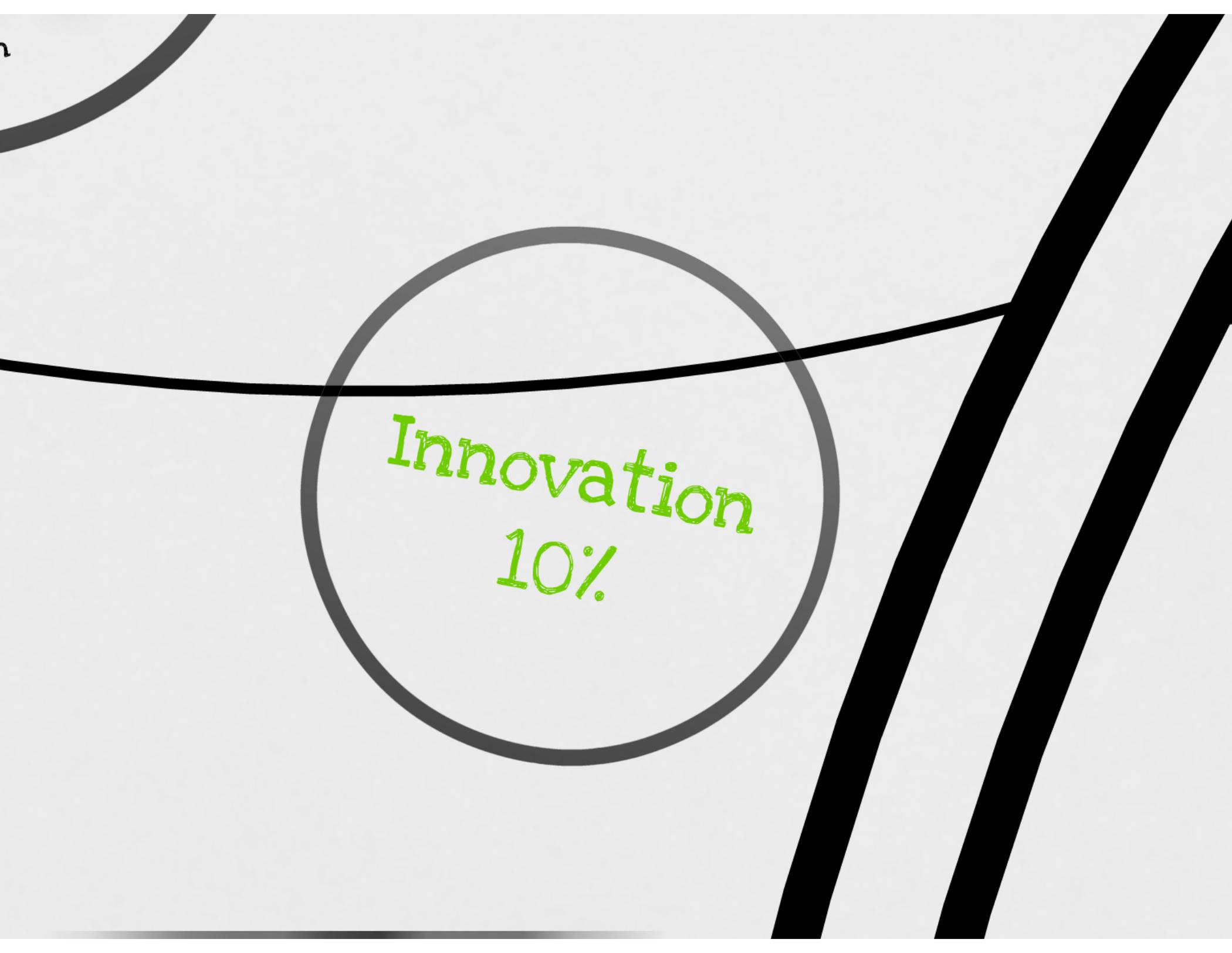
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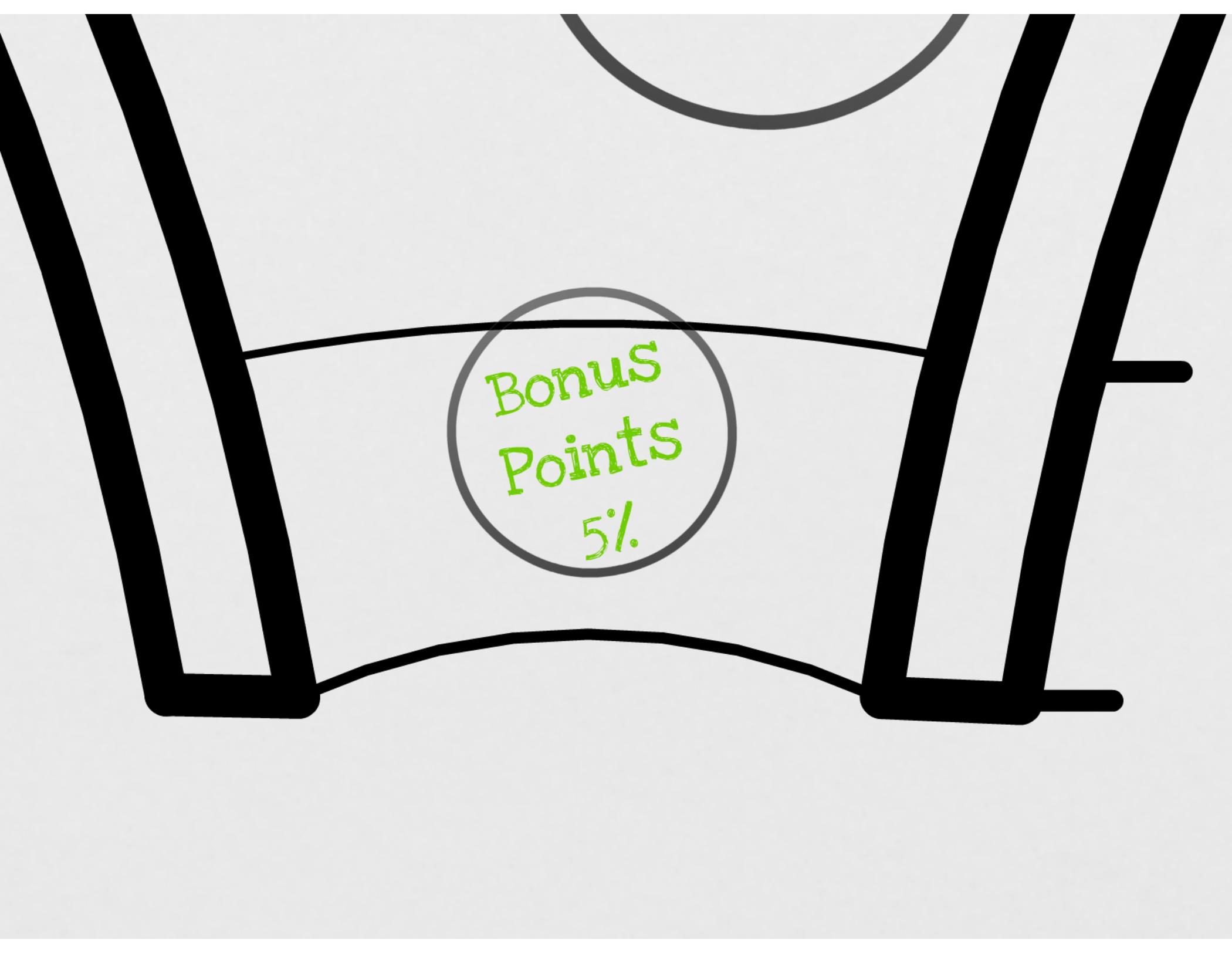
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A hand-drawn diagram on a light gray background. A central circle is drawn with a dark gray outline. Inside the circle, the word "Innovation" is written in a green, slightly irregular font, with "10%" written below it in the same style. To the right of the circle, two thick black lines curve upwards and to the right. A thin black line curves from the left side of the circle towards the right, crossing the top of the circle.

Innovation  
10%



Bonus  
Points  
5%

15

22

29



Green Best Practices -  
Reduce/ Reuse / Recycle  
177,937,001 views  
**HDCYT** ★★★★★

Green Best Practices - Environment/ Water  
110,107,076 views  
**KrowBatello** ★★★★★

Green Best Practices -  
Housekeeping & Air Quality  
71,293,670 views  
**behindthesecret** ★★★★★

Green Best Practices - Energy  
141,066,035 views  
**judsonlapply** ★★★★★

Gracious Best Practices - Public Safety  
86,481,885 views  
**hollywoodrecords** ★★★★★

Gracious Best Practices -  
Workforce Management  
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**Kicesle** ★★★★★

Gracious Best Practices - Accessibility  
114,371,965 views  
**BlackOleg** ★★★★★

Gracious Best Practices - Noise & Vibration  
78,814,465 views  
**NeilCicierega** ★★★★★

Gracious Best Practices - Communication  
66,444,075 views  
**wolf084** ★★★★★

**GREEN and GRACIOUS**  
Green Best Practices  
114,200,703 views  
**UltraRecords** ★★★★★

Innovative Green & Gracious Best Practices  
71,973,201 views  
**guitar90** ★★★★★

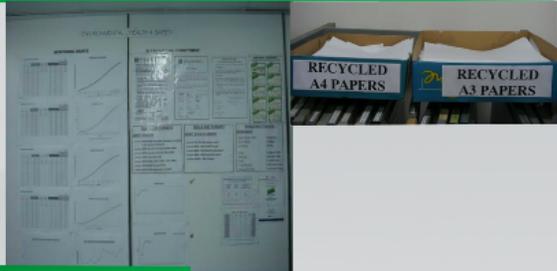
Innovative Green & Gracious Best Practices

Integrated modular formwork system



Protective coat on plywood surface allows reuse up to 120 times!!

Wastage monitoring chart displayed on site & Using recycled paper



Reduce Timber Aluminium Runner



Conventional formwork system



Aluminium protected formwork panel prolong plywood lifespan

# Green Best Practices - Reduce/ Reuse / Recycle

177,937,001 views

HDCYT





North south orientation of site office and greening of site office to reduce energy consumption.



Use of solar cells for site office and powering noise meter



Refrigerators and split air conditioning units with green ratings are used in the site office.

## Green Best Practices - Energy

141,066,035 views

★ judsonlaipply





# Green Best Practices - Environment/ water

110,107,076 views

**KrowBatellio**





Cover stock pile



Full time health supervisor



Milled waste access



steel plate access



# Green Best Practices - Housekeeping & Air Quality

71,293,670 views

**behindthesecret**





Traffic controller deployed at site to help the pedestrian and road users



Proper signs to forewarn both motorists and pedestrians



Provided ramp for public walk way

# Gracious Best Practices - Accessibility

114,371,965 views

★ BlackOleg





convex mirror at site entrances



vehicular barriers

## Gracious Best Practices - Public Safety

86,481,885 views

★ hollywoodrecords



ite



Using noise barriers to mitigate noise at source



Using high hoarding as noise barrier

## Gracious Best Practices - Noise & Vibration

78,814,465 views

★ NeilCicierega





Communication with neighbouring residents makes the difference



Going the extra mile – Builder built air conditioners and curtain louvers for school beside the construction site



company banners with contact details

## Gracious Best Practices - Communication

66,444,075 views

wolf084





# Gracious Best Practices - Workforce Management

70,022,393 views

**kicesie**





air-con condensate



desanding machine



earth control measures



automated  
wheel washing  
bay

## Innovative Green & Gracious Best Practices

71,973,201 views

★  
**guitar90**





extensive  
use of  
greeneries



tree protection



## Innovative Green & Gracious Best Practices

## Incentives

→ Construction  
Productivity & Capability  
Fund

→ Green Mark Version 4

→ GGBS as an evaluating  
criterion during PQM  
for tender evaluation

# GREEN and GRACIOUS

G REEN AND GRACIOUS BUILDER Star  
G REEN AND GRACIOUS BUILDER Excellent  
G REEN AND GRACIOUS BUILDER Merit  
G REEN AND GRACIOUS BUILDER Certified

## Builder Guide



Please refer to latest guidelines on  
[http://www.bca.gov.sg/Awards/GGBA/builders\\_award.html](http://www.bca.gov.sg/Awards/GGBA/builders_award.html)



114,200,703 views

★ **UltraRecords**



Thank You

