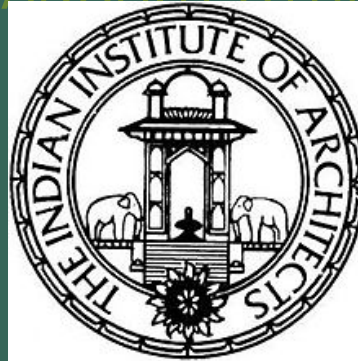




# COUNTRY REPORT

ARCHITECTS COMMITTEE FOR GREEN AND SUSTAINABLE  
ARCHITECTURE



PRESENTED BY:

**AR. TUSHAR SOGANI**

member ACGSA, INDIA

# GREEN BUILDING INDUSTRY IN INDIA



# GREEN BUILDINGS



Green building is a holistic concept that starts with the understanding that the built environment can have profound effects, both positive and negative, on the natural environment, as well as the people who inhabit buildings every day.”

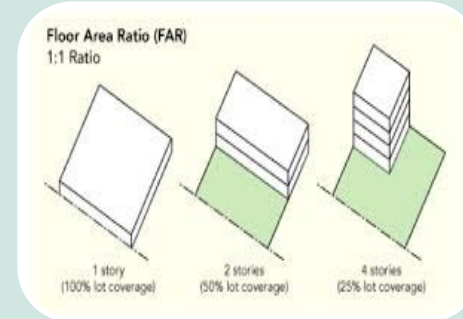
# BENEFITS FOR PROPERTY OWNERS IN INDIA:



20-30% Energy savings



Average 15% Water savings



Extra FAR in Indian states



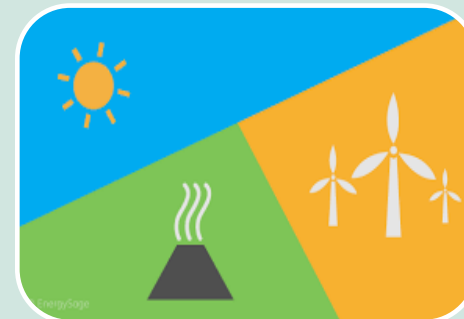
Reduced operations cost by 19%



More Occupant productivity



Better market value of projects in India



Promote Renewable and Clean energy

# BENEFITS ON F.A.R REGULATIONS

## IGBC and Government . . .

- Ministry of Environment and Forests (MoEF) Notification on Green Buildings
  - Faster Environmental Clearance to projects applying for IGBC Green Building Certification
- Jaipur Development Authority (JDA)
  - Additional FAR of 5% free of charge for IGBC rated Green Buildings
  - Plot size of 5,000 sq.m and above
  - Achieving a minimum of Gold rating



WEST BENGAL

10% additional FAR for Green Building is a **Welcome Move**

No additional Cost for Extra FAR is Recommended as Green buildings cost at least 15% more than ordinary buildings

- Certain tax incentives should be granted like Concession in Property Tax post development
- This would enhance demand for Green Buildings
- Periodic Submission of Report is imperative

RAJASTHA

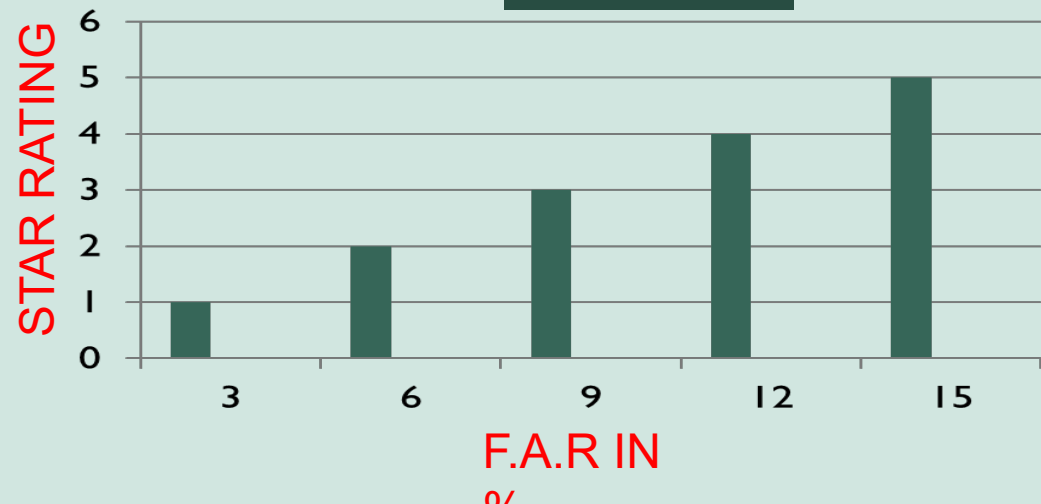
## IGBC and Government . . .

- Punjab Urban Development Authority (PUDA)
  - Additional FAR of 5% free of charge for IGBC rated Green Buildings
- Development of State-wise Green Building Guidelines



PUNJA

HARYANA



# GREEN BUILDING SCENARIO IN INDIA:

Green Building Industry in India to grow by more than 20% in 2018 than previous years.

India ranks second after the US in terms of the green building projects and built-up area.

Exponential green building growth in India driven by awareness, governments support, subsidies and sanctions/compulsions

5,300 projects with about 7 billion sq. ft. of built-up area registered for green technology as of September 2017.

The industry is expected to grow to more than 12 billion sq. ft. by 2022.

# GREEN BUILDINGS RATINGS IN INDIA

Green building rating systems are developed to measure the “Greenness” of the buildings based on various criteria and principles.

The top rating systems in India are:



**LEED**



**IGBC**



**GRIHA**



**GEM**

# IGBC IN INDIA



IGBC has facilitated about 5.27 billion sq. ft. green print and aspires to touch 10 billion sq. ft. by 2022



**Godrej Garden City- IGBC Platinum**



**Embassy Tech Village- IGBC Platinum**

## EVENTS AND TRAINING BY IGBC

World GBC's Asia  
Pacific Leadership  
in Green Building  
Awards 2018

Training programs  
on green buildings

IGBC Green  
League

Green Your  
School 2018

Green building  
Congress

# IGBC GREEN BUILDING RATING SYSTEMS

IGBC has laid down various green building rating systems (21 rating systems) :

## IGBC Green Building Rating Systems

<b>Commercial</b>	IGBC Green New Buildings IGBC Green Existing Buildings IGBC Green Interiors IGBC Green Campus IGBC Green Data Centres
<b>Health &amp; Wellbeing</b>	IGBC Green Healthcare Facilities Rating IGBC Wellbeing Rating
<b>Industrial</b>	IGBC Green Factories IGBC Green SEZ
<b>Built Environment</b>	IGBC Green Cities IGBC Green Existing Cities IGBC Green Villages IGBC Green Landscape IGBC Places of Worship
<b>Residential</b>	IGBC Green Homes IGBC Green Residential Society IGBC Green Affordable Housing
<b>Education</b>	IGBC Green Schools
<b>Transit</b>	IGBC Green Metro Stations IGBC Green Existing Metros IGBC Green Railway Stations

# IGBC - Snapshots of Key Achievements

**4,289**

Green Building  
Projects



**170**

(Green  
Certified Products)

GreenPro  
Product)

**2,050**

(including 151)  
Founding  
Members



**2,662**

IGBC Accredited  
Professionals



Facilitated introduction  
of over

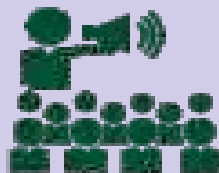
**150**

Green Building Products  
& Technologies



**5.27 Billion sq. ft.**

2<sup>nd</sup> Country in the world in terms of largest  
registered green building footprint



**140**

Student  
Chapters



Trained over  
**30,000**  
Professionals



**23**

Local Chapters



**21**

Green Building  
Rating Systems

# DIVERSITY IN IGBC PROJECT TYPES

**200+**  
Green Factories



**1,600+**  
Green office



**300 +** Green Transit



**8** Green Villages



**11,47,600+**

Green Homes (Dwelling units)



**45+** Green Townships



**3** Green Cities



## 1,125 IGBC Certified Projects



Saves 15,000 MWh of Energy per million sq ft per annum



Saves 45,000 KL of Water per million sq ft per annum



Facilitated installation of 20 MW of Renewable Energy so far



Reduced CO2 emissions by 12,000 Tons per million sq ft per annum



Diverted 500 Tons of construction waste per million sq ft





# GRIHA IN INDIA

1175 projects are being evaluated by GRIHA and 78 buildings have been rated so far. GRIHA is seeing increasing interest from building owners, design professionals and government agencies.



**Group Housing Project, New Delhi**



**Infosys Hyderabad**

# EVENTS AND TRAINING BY GRIHA

GRIHA  
Regional  
Summit 2018

One day  
GRIHA training  
programs

Webinars

National and  
regional  
conferences

Three day  
GRIHA training  
programs

# GRIHA REGIONAL SUMMIT 2018



The GRIHA Regional Summit 2018, Bengaluru with the theme **"Sustainable Alternatives to Urban Fabric"** shall serve as a platform for stakeholders to discuss innovations and ideas that can change the way buildings are conceived, constructed and operated.

It will be a confluence of individuals from various backgrounds and shall provide an opportunity to promote sustainability, environmental responsibility and exchange of vital knowledge.

# LEED IN INDIA

In India, there are more than 1,990 projects, comprising more than 822 million sq. ft. of space, participating in LEED.

India ranks third among top ten countries (excluding USA) in having LEED rated buildings only after China and Canada.



**Suzlon One Earth- Pune, LEED Platinum**



**The Luminary- LEED GOLD**

# GREEN BUILD INDIA- MUMBAI

Green Build India is a flagship event for sustainability professionals in the green building community. It is an international conference and Expo hosted by the USGBC Green Build India. This year is to take place in Mumbai from 15<sup>th</sup> to 18<sup>th</sup> November.



**Inspiring keynotes**



**Robust sessions & invaluable networking**



**Interactive expo hall**

# OTHER SEMINARS AND EVENTS

## MAS-SHIP SEMINAR MAINSTREAMING SUSTAINABLE SOCIAL HOUSING IN INDIA PROJECT



## RANTHAMBORE FEST- CLIMATE OF DESIGN



# COUNCIL OF ARCHITECTURE (COA), INDIA



Under the faculty development programme and curriculum updation the COA has, included the Green and Sustainable Practices in the curriculum for the architecture students in India.

ALL SYSTEMS COMBINED.....

**WE**

ARE GLOBAL LEADER IN "GREEN BUILDING FOOTPRINT"

**MORE THAN 7 BILLION SQ. FT.**

UNDER VARIOUS GREEN RATING SYSTEMS

MAJOR CONCERN  
FOR US TODAY.....



Let me now give you some numbers.....

**3,274**  
relief camp

**100** Year's worst flooding in the Southern state of Kerela

**1,447,496** People in camps

**57,000** hectares of agriculture crops have been destroyed

**20000+** Crores of Approx. estimates loss of property

**483** Died

**98.5** Milimeters of Rain was predicted from August 9 to

**10000** Kms of Roads washed away

but the state got <sup>15</sup>**352.2** mm

# KERALA FLOODS : NATURAL DISASTER

## AGGRAVATED BY MAN ?

### What caused the killer floods in Kerala: Excess rain or human error?

TNN | Updated: Aug 23, 2018, 13:58 IST



#### HIGHLIGHTS

- Leader of opposition Ramesh Chennithala allegedly termed the floods as a man-made disaster
- JNU professor Amita Singh also said the flood was not caused merely due to excess rain
- Chief minister Pinarayi Vijayan termed the charge as baseless



## Did we see this coming?

Back in 2011, the Gadgil Committee put together a bunch of **recommendations** to the central government about ecologically-fragile regions in the Western Ghats. They found the highest number of vulnerable zones in Kerala and cited several reasons for them being classified as such.

Some reasons for its vulnerability were geographical, a challenge posed by its position amidst the Ghats. Many other causes – quarrying, mining, illegal repurposing of forests, and high-rise building constructions – were man-made, controllable factors that the state chose to **brush aside**.

"The flooding has definitely brought to light the existence of illegal stone quarries or a large number of unauthorised constructions on river beds," Professor Madhav Gadgil **said** to *PTI*. "In this sense, it is definitely a man-made calamity where intense rainfall and human intervention have made it a serious disaster."

The quarrying Prof Gadgil refers to, along with deforestation in the region, has been identified as the specific reasons for the state's vulnerability to flooding.



Kochi: People being rescued from a flood-affected region following heavy monsoon rainfall, in Kochi on Thursday, Aug 16, 2018. PTI

GADGIL REPORT  
ON ECOLOGICALLY  
VULNERABLE  
REGIONS  
UNAUTHORISED  
ENROACHMENTS AND  
DEFORESTATION MAJOR  
REASONS

# MEDIA COVERAGE ON FLOODS



An aerial view of floods in Kerala. Image: PTI

Rediff.com » News » What caused the rain havoc in Kerala

## What caused the rain havoc in Kerala

August 15, 2018 10:44 IST

'A lot of unauthorised encroachments have taken place in our forest area.'

'The landslides are partly because of such encroachments.'

'The other factor is deforestation.'

'Protection of forest resources is not on the agenda of any government.'

'The damage caused by the rain in Kerala is a man-made factor.'

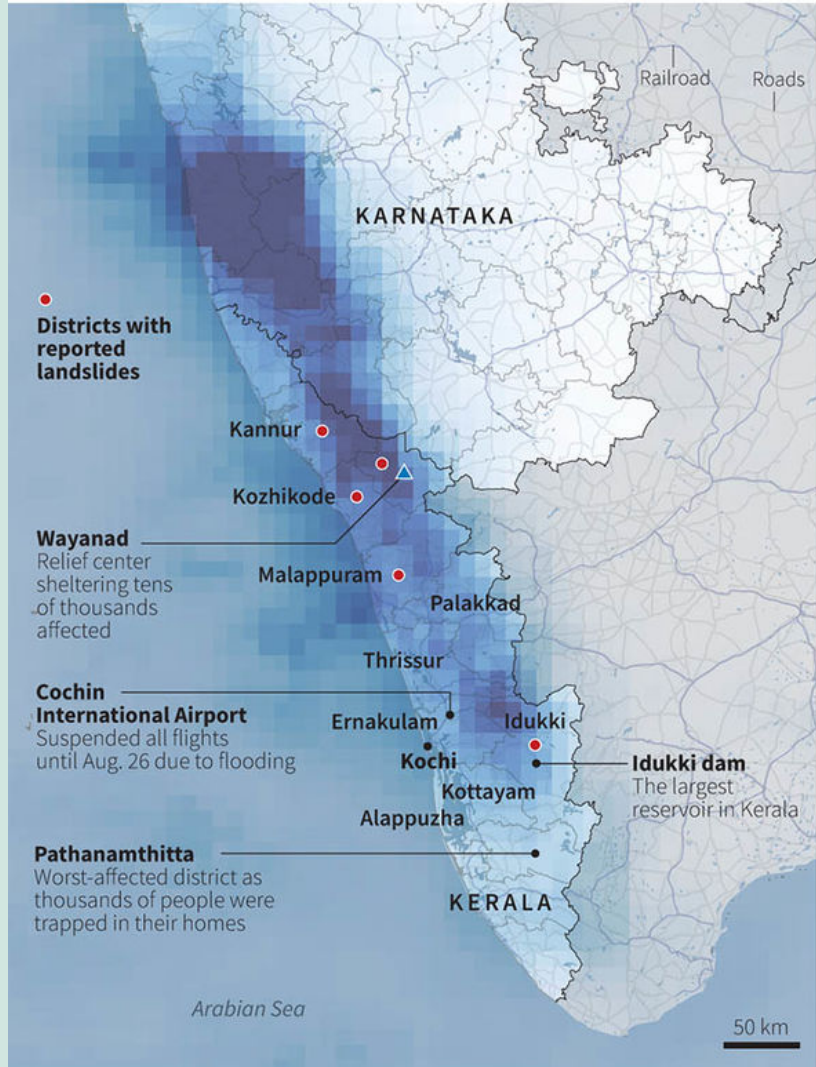


## Kerala flooding



Accumulated Precipitation  
From Aug. 10 to 16

0 200 400 mm



# KERALA FLOODS : THE HAVOC CAUSED



**Kerala Floods: Achuthanandan Calls for Demolition of Illegal Constructions:**  
Veteran CPM leader VS Achuthanandan said the intensity of Kerala floods got multiplied by landslides and soil erosions which were a result of illegal constructions and encroachments.



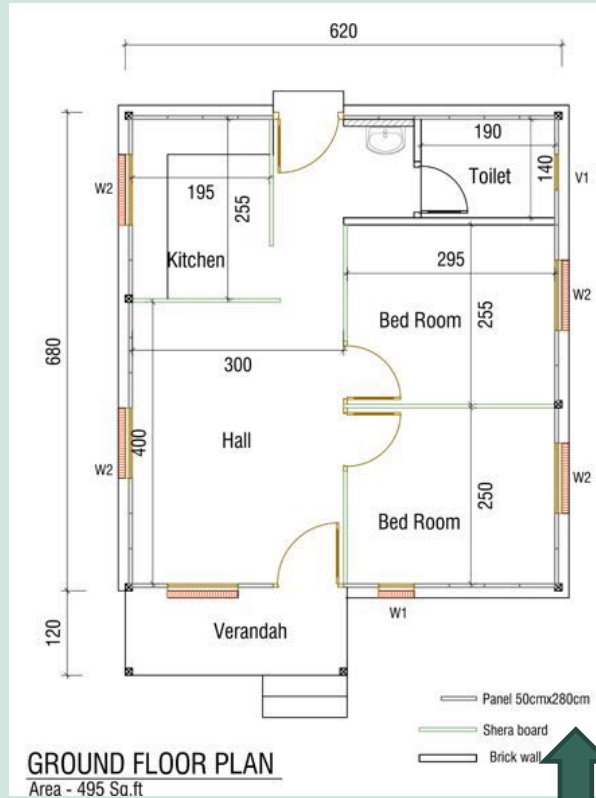
# KERALA FLOODS : RELIEF WORKS

## (BY IIA KERALA CHAPTER)

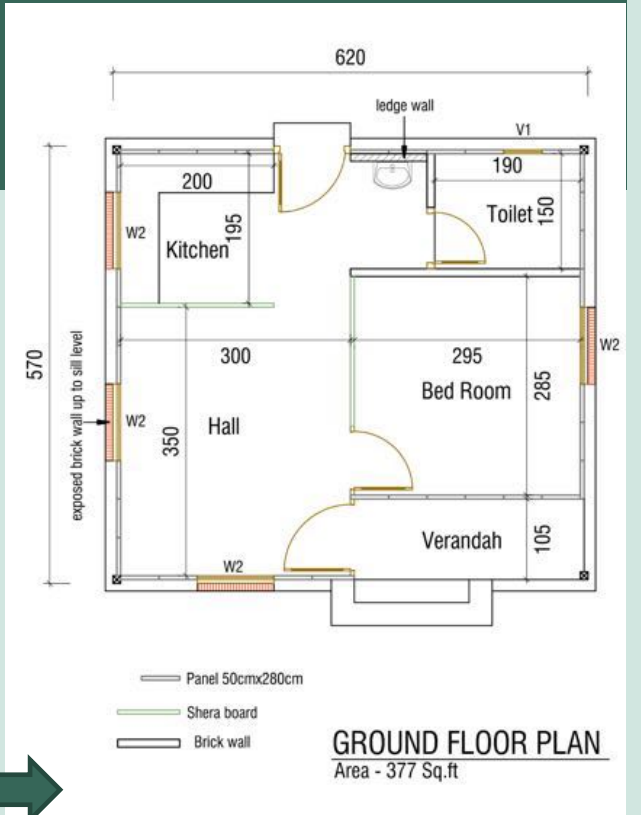


Sample proposals developed by architects for cost effective but sturdy/ easily erectable houses.

Architects across the State are developing such proposals which will be exhibited for



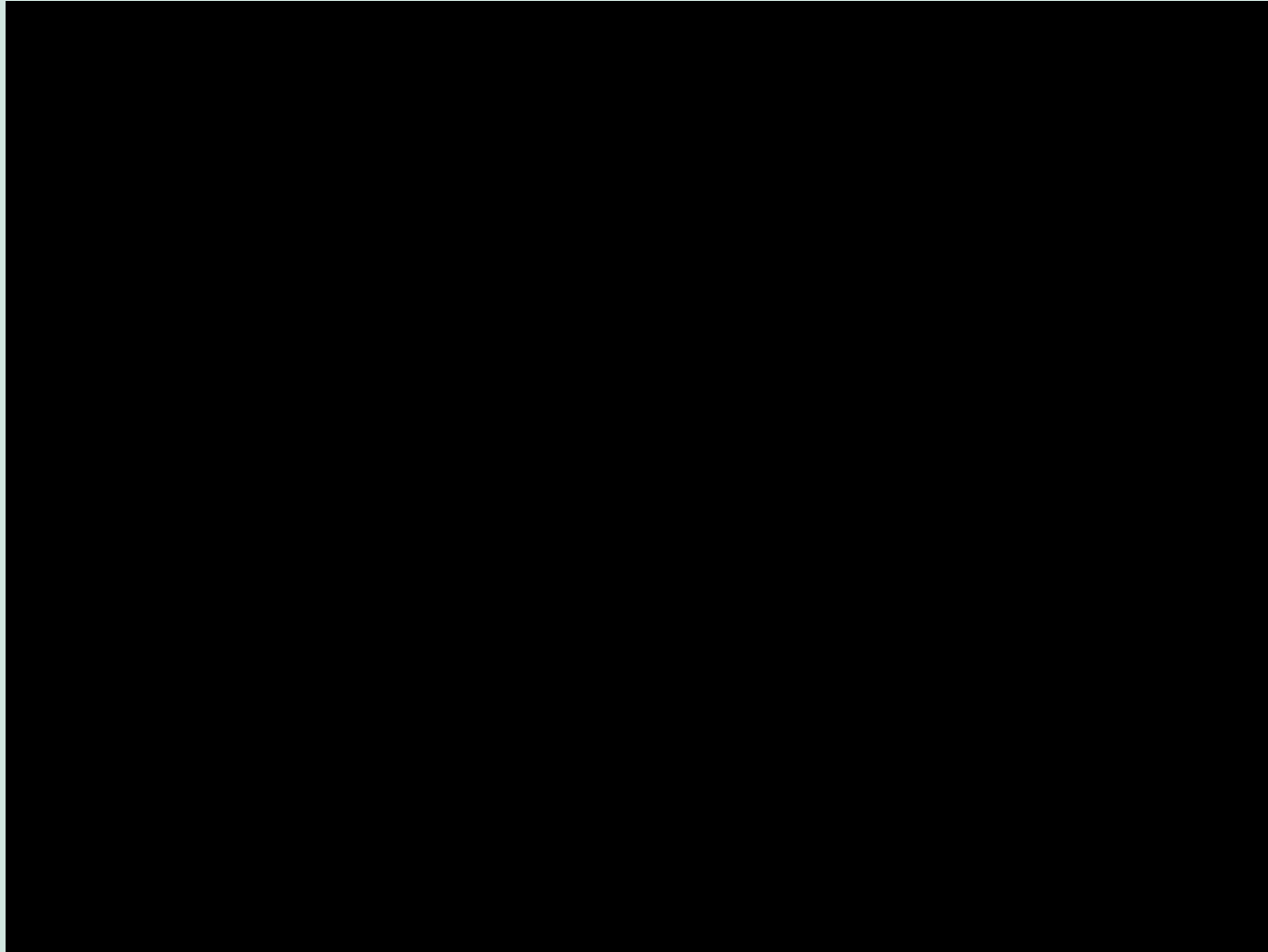
Single Bed room unit - 377 sq. foot of area, same technology as above, will cost around **Rupees four Lakhs and fifty thousand** only.



The total cost of this 2 bedroom unit, with water tank, septic tank, epoxy floor finish, painting, toilet finishes etc. comes to **Rupees five Lakhs and fifty thousand** only.



GOING GREEN....KEEPS US ROOTED !!!



# ARE JUST DISCUSSIONS ENOUGH??



**“Politicians discussing global warming”**  
— that's what social media users have dubbed this tiny puddle sculpture by Spanish artist.

LETS NOT FALL IN THE WAY OF NATURE'S FURY.....



THE ONLY WAY:  
GREEN WAY!!!



THANK YOU....