Background note for producing of Documentary Short Film (DVD) on Green Building Guidelines and Rating System

Contents to be covered

A) Problems with present day buildings (4 minutes)

There is an urgent need to address the great challenges of our times: climate change, natural resource depletion, pollution, and energy demand. These issues are all accelerating rapidly, and all have strong links with the building industry. The built environment is also responsible for significant amounts of air, soil and water pollution, and millions of tonnes of landfill waste. This is a situation that clearly needs to change.

- **High Energy Consumption**

40% of total energy is used by the buildings for heating, cooling, equipment and light. With the inevitability of declining fossil fuels in future and high CO_2 emission by producing energy using fossil fuels, reducing our energy consumption is an essential survival strategy for mankind. Global carbon CO_2 emission from fossil fuel were 35.9 $GtCO_2$ in 2014. Fossil fuel emissions were 0.6% above emissions in 2013 and 60% above emissions in 1990 (the reference year in the Kyoto Protocol).The low embodied energy of green products ensures that very little energy went into their manufacture and production, with a direct reduction in carbon emissions. Eco friendly design methodology can further reduce energy consumption. Saving energy for the occupant also saves money - an issue that will become increasingly important as the cost of fossil fuels inevitably rises in the near future.

- **Lack of healthiness of buildings.**

Conventional building materials and methods have been linked to a wide range of health problems. Chemical pollutants from paints, solvents, plastics and composite timbers, along with biological pollutants such as dust mites and moulds are known to cause symptoms such as asthma, headaches, depression, eczema, palpitations and chronic fatigue syndrome. Green buildings eliminate these problems through good ventilation design, breathable walls, and the use of natural, non-toxic products and materials.

There are many good reasons why we should use eco-friendly construction methods and materials. It can improve the health of our planet, and the health of our own lives. It also supports local business and helps strengthen the local economy, which in turn helps to build our communities into vibrant, prosperous and desirable places to live.

- **Diminishing Water resources**

Potable water has a massive energy footprint, even in water-rich areas we don't pay anything like the true cost of this nonrenewable resource, so most of us don't think twice about polluting it. The availability of fresh water has become a matter of increasing concern in a context where developed and developing countries are engaged in a race to obtain resources that are inexorably becoming scarcer. Conventional buildings have undermined the use of water efficiently. Therefore, eco friendly buildings must be designed to manage drinking water, waste water, irrigation water and rain water for a sustainable approach.

- **Waste and toxic substances**

Present buildings and occupants generate fairly large quantity of waste. Green Building concept offers solutions such as composting bins, to reduce the volume of matter going to landfills. The green architect

also aims to reduce waste in terms of energy, water and materials used for the construction. This considerable reduces the volume of waste sent for disposal during the construction phase. Green building avoids the systematic burial of materials retrieved from buildings at the end of their life by recycling and recuperating them. The extension of the useful lifetime of a structure also enables waste reduction.

The quality of interior air is an important factor in a green building. To do this, it must also seek to reduce volatile organic compounds (VOC) and other air impurities such as microbial contaminants. The ventilation systems must be well-designed to ensure suitable ventilation and air filtration, as well as to isolate certain activities (kitchens, dry-cleaning, etc.) from other applications.

- **Excess use of Raw Materials**

Building and construction activities worldwide consume 3 billion tons of raw materials each year or 40 percent of total global use. Using green building materials and products promotes conservation of dwindling nonrenewable resources internationally. In addition, integrating green building materials into building projects can help reduce the environmental impacts associated with the extraction, transport, processing, fabrication, installation, reuse, recycling, and disposal of these building industry source materials.

- **Improper site selection**

Most of the present buildings had been built disregarding distance to workplaces, schools, shopping, etc and therefore travel distance and time is considerably high. The lands have already been dedicated to development, so more natural land were destroyed and the costly roads and utilities are already in place. Therefore short distances, sidewalks, bike paths and bus stops will allow for healthier modes of transportation and the avoidance of excessive costly, polluting automobile trips. A lot in an established neighborhood located close to town is a particularly good choice for many people. Avoiding environmentally sensitive areas helps protect some of the features that makes many areas so special – our creeks, lakes, aquifer, tree-covered hills, wildlife, native wildflowers & plants.

B) Benefits of Eco-Friendly Building (4 min)

Ecofriendly building of apartment properties requires a major commitment, but offers a multitude of benefits to the environment and residents. Among the benefits are:

- Conservation of natural resources
- Enhancement and protection of the property's natural surroundings
- Improved indoor air quality
- Improved health and comfort of occupents
- Minimized impact on the local infrastructure
- Reduction of construction waste sent to landfills

Required details are found in Para A – Problem with present day buildings