Upgrading Delhi's Buildings using Australia's ESCO Experience

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Szencorp Leadership

- Experience in commercial and retail property
- Solutions for energy and water performance in buildings
- Turnkey delivery
- Guaranteed outcomes

The Szencorp Group of Companies

jaemax developments

water conservation systems

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carbon partners

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Szencorp created Australia's highest rated green building

- Six Star Green Star (Platinum LEED equivalent) and the first refurbished Green Star Building
- 5 Star performance rating (NABERS) for Water and Energy
- Energy savings of 70% over pre-refurbishment levels

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The Australian-Indian Building Tune Up

- An approved bilateral Australian-Indian Government project under the Asia Pacific Partnership on Clean Development and Climate ('APP')
- Australian Government Funding of $3m provided
- Local JV requirement for technology transfer

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Participating Organisations

- Indian Ministry of Environment and Forests
- Indian Ministry of Urban Development and CPWD
- Indian Bureau of Energy Efficiency
- Australian Government Department of Environment, Water, Heritage and the Arts
- Energy Conservation Systems (official Australian Government nominee for execution of the project)
- Asian Development Bank
- Indian Building Owners

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Project Stages

Stage One: Building Owner Commitment

Stage Two: Establish Energy Use Baseline and Modelling

Stage Three: Detailed Facility Studies

Stage Four: *Business Case to Building Owners*

Stage Five: Tune-up

– energy performance contracts used to ensure upgrades can be paid for using future energy savings.

Stage Six: Monitoring and Promotion

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Project Deliverables

- Energy savings and subsequent reductions in greenhouse gas emissions and peak demand
- Creation of new Indian / Australian joint ventures, industry capacity and related high value job creation
- Demonstrate substantial practical action as an approach to addressing climate change
- Demonstrated savings in relation to downsized plant requirements (chillers) as a result of tune-up activities
- Indian capacity building in energy efficiency delivery mechanisms and measurement & verification systems

Project Sites

- 7 - **Office Buildings**
- 1 - **Museum**
- 2 - **Hospitals**

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Expected annual savings from upgrades

- Investment:
  US$15,000,000
- Energy savings
  US$2,500,000
- Maintenance savings
  US$300,000
- Internal Rate of Return
  12%
- Greenhouse Reduction
  15,620 tonnes

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Project financing

Tripartite model

- Bank pays ESCO
- Client repays bank from savings guaranteed by the ESCO
- 100% project funding from Indian Banks
- Asian Development Bank

Benefits to Building Owners

- Engineering studies (paid by Aust Govt and ECS)
- Energy metering systems (paid by Aust Govt and ECS)
- Upgrade of buildings services & major plant (paid for by savings)
- Nil out of pocket cost
- Knowledge sharing with building owners & managers
- Substantial reduction of greenhouse gas emissions
- All future cost savings (i.e. savings from years 6 or 7 onward, the first 5 or 6 years saving used to pay for the upgrade)

NOTE: (Upgrades can be done without stopping the operation/working of the building even for a day)

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Energy Conservation Measures

- Air conditioning upgrades
  - Chillers
  - Air Handling Units
  - Cooling Towers
- Variable Speed Drives
- Building Management Systems
- Lighting upgrades
- Lighting Controls
- Examine building envelope + solar thermal A/C
- Awareness

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Next steps

- Finalise baselines and metering
- Finalise joint venture agreements with Indian counterparties
- Implement and monitor building upgrades
- Determine replicability for other sites in Delhi and other Indian cities

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