

Shore Protection at Radisson Temple Bay Resort, Mahabalipuram

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Chennai

Thursday, March 03, 2011

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Shore Protection at Radisson Temple Bay Resort, Mahabalipuram



Mahabalipuram

- World Heritage Site
- Sixth Century Pallava Art & Architecture
- Seven Pagodas reported by Mariners
- Only one is remaining at present
Which is protected by seawall around and behaves as a groin
- Other 6 submerged in the process of shoreline changes
- Erosional regime which aggravated by the protruding temple.

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Shore Protection at Radisson Temple Bay Resort, Mahabalipuram



Erosion at Radisson Temple Bay Resort

- Interruption of northerly littoral sediment transport
- Possible continuing Sea Level Changes



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Shore Protection at Radisson Temple Bay Resort, Mahabalipuram

Emergency Protection



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Criteria for selection of Beach Protection Method



- Essentially tourist friendly –
Seawalls are not preferred
- So, thought process to develop
satisfying the above criteria has
lead to the development of

SAB Technology

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SAB® -

SAB – Sediment Accumulator in Beach Patented Technology for Beach Development

SAB® -  BeachLOCK Unit




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SAB® - , BeachLOCK Unit



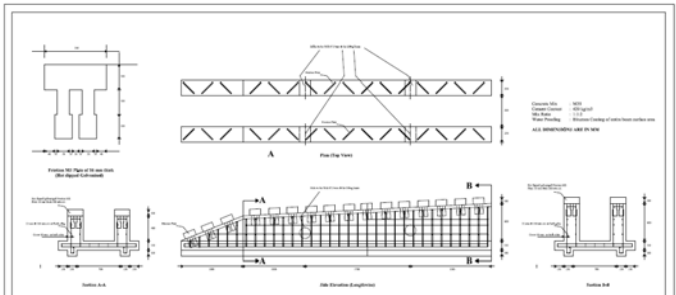
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SAB® -
SAB – Sediment Accumulator in Beach
Patented Technology for Beach Development

SAB® - BeachLOCK Unit



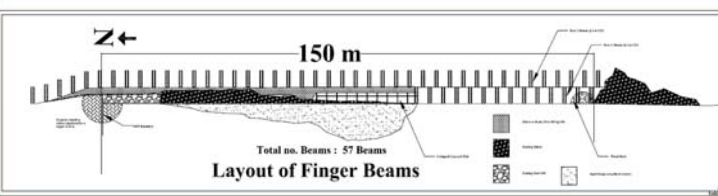
Details of 100 PCC Finger Channel Beams

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SAB® -
SAB – Sediment Accumulator in Beach
Patented Technology for Beach Development

Layout of SAB®/ BeachLOCK Units




Total no. Beams : 57 Beams
 Layout of Finger Beams

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Sediment Transport in the Surfzone

- Waves float Sediment particle
- Bed Velocity > 0.15 m/s




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Sediment Transport in the Surfzone

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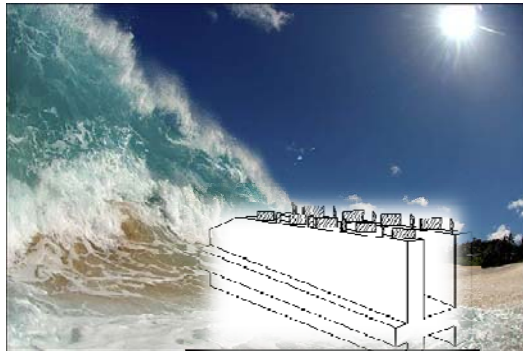
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Function of Beach LOCK Unit in the Surfzone

- Prevents movement of floated sediments
by currents



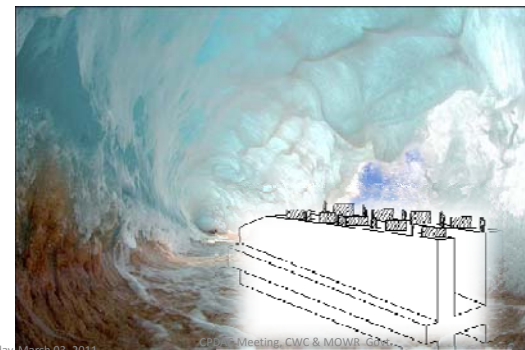
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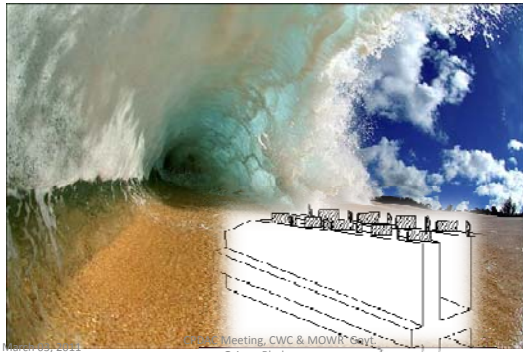
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Function of Beach LOCK Unit in the Surfzone

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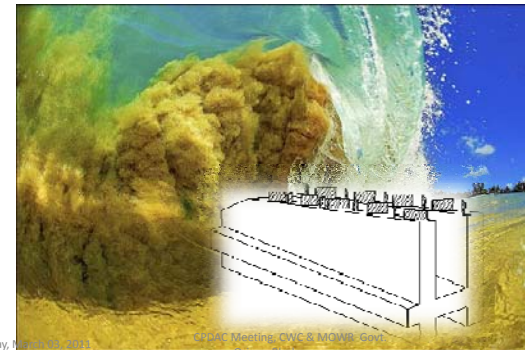
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Function of Beach LOCK Unit in the Surfzone

- Prevents movement of floated sediments by currents



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Changes in Sediment Transport in the Surf zone due to Beach LOCK (SAB) Unit

- **Bed Velocity is reduced because of friction. So settlement of sediment around SAB/ Beach LOCK units takes place**
- **Current Displacement of sediments is prevented due to obstruction. So the spaces between SAB units is filled due to obstruction and over passing**
- **Intensity of pore pressure reduces and beach hydraulic conductivity will be reduced resulting reduced levels of erodibility**

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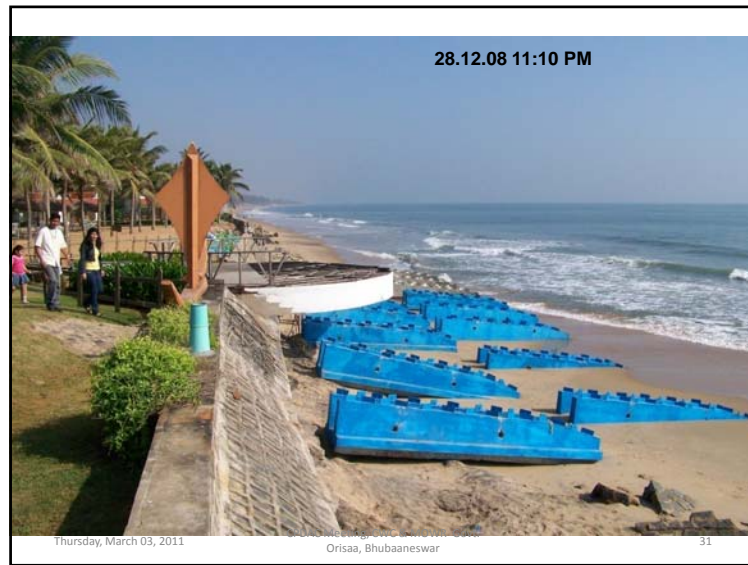
Beach LOCK (SAB) Units from Precast to Beach Placement

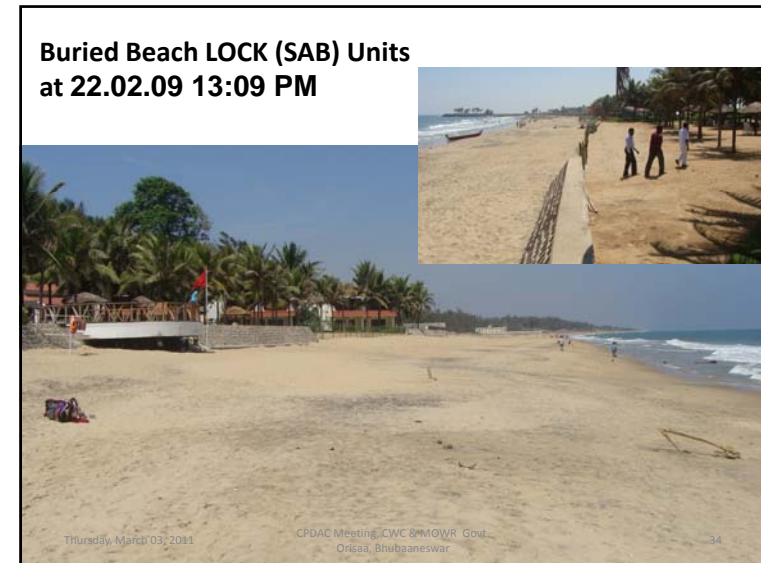
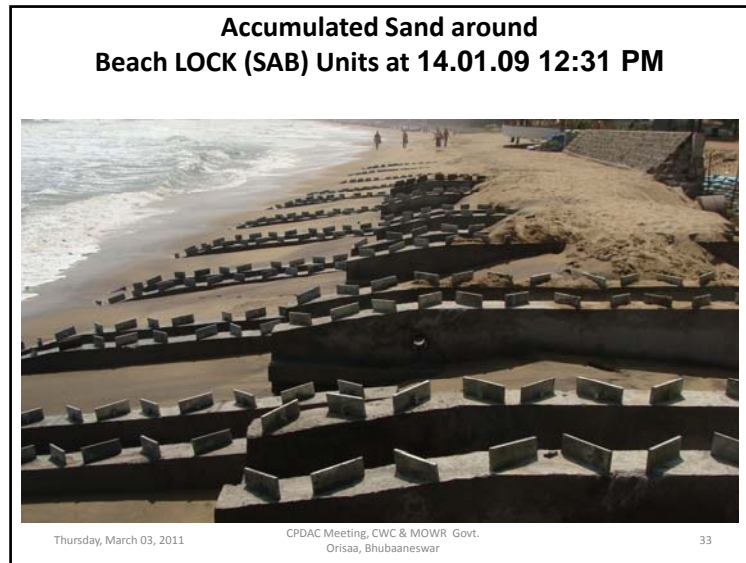


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Shoreline Position at Protected site on 28.05.09



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Shoreline Position at Protected site on 03.06.09



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Shoreline Position at Protected site on 14.06.09



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Shoreline Position at Protected site on 05.07.09



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Shoreline Position at Protected site on 19.09.09



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Shoreline Position at Protected site on 18.11.09



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Shoreline Position at Protected site on 05.12.09

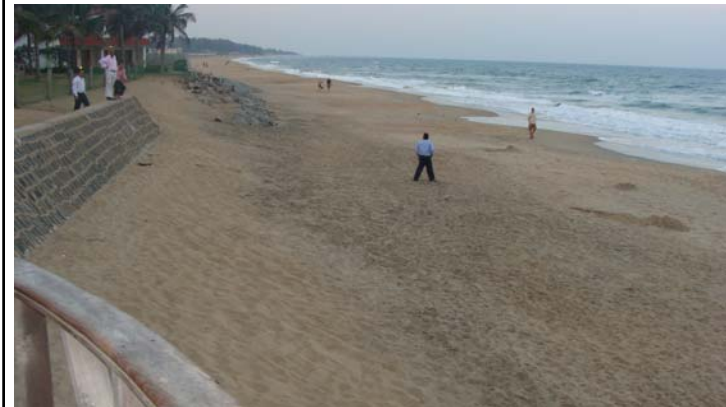


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Shoreline Position at Protected site on 12.02.10



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Shoreline Position at Protected site on 28.11.10



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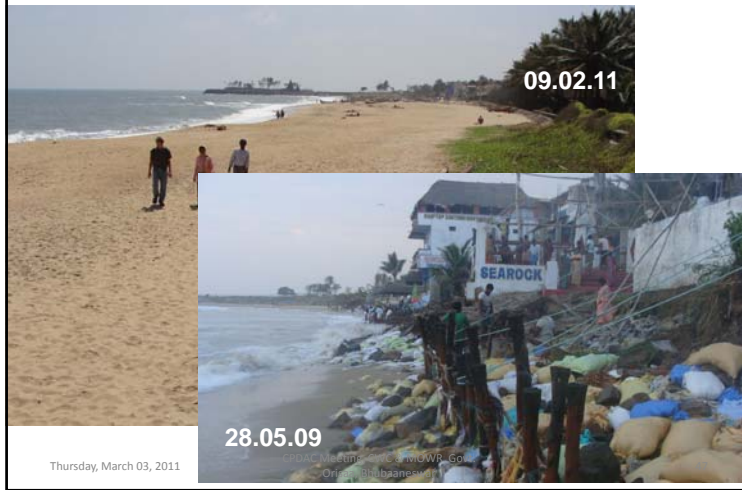
Shoreline Position at Protected site on 09.02.11



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Secondary Protection due to SAB units



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Secondary Protection due to SAB units



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Physical Details of Beach Front Protection

Total length of Beach protected : 300 m
 Start date : Dec 2008.
 Completion date : Jul 2010

(Implemented in piecemeal with each period of one to two months just after each monsoon depending on the monsoonal requirements)

Total Cost : Rs.35.4 Lakh
 Cost of Concrete length of 160 m : Rs.16.8 Lakh
 Cost per meter (Overall) : Rs. 11,800/-
 Cost per meter (Concrete Portion) : Rs. 10,550/-

Successful Maintenance of beach front till date and the present technology is patented

Thanks for your kind attention



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Lucky Team to Remember for New SAB Technology



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