



**Project Sammaan**  
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## PROJECT OVERVIEW

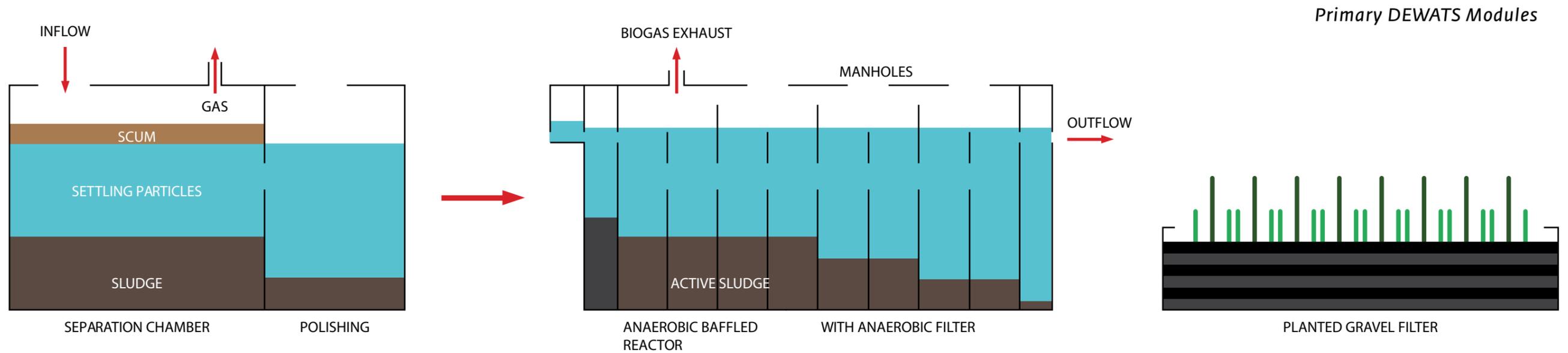
Project Sammaan is an urban sanitation initiative dedicated to redesigning and improving facilities for slum communities across India. The initiative is being piloted in Bhubaneswar and Cuttack with the aim to replicate it in other cities, if successful.

The objective is to rethink the current models of sanitation facilities and design a new programmatic infrastructure and physical structure that instills a sense of dignity while addressing issues affecting sanitation practices in India and encouraging community members to stop defecating in the open.

Over 100 of the reimagined facilities will be built and a dedicated research team will analyze the qualitative and quantitative impact they have on the communities in which they're built. The results of this intensive research will be shared in an open-sourced toolkit that will allow for replication in cities across India and beyond.

Project Sammaan was born out of the research conducted for the Potty Project, an in-depth design research study focused on all aspects of the current sanitation models employed in urban slum communities throughout India.

## FEATURE: Sewage



### Sewage Management Strategies

The sewage management strategy for the Project Sammaan community toilets is nearing finalization and this is a great time to take a quick look at the technologies themselves, as well as our reason for choosing to implement a different sewage management technology and system than is currently followed in similar sanitation facilities across Odisha and India.

If you have been following the Project Sammaan blog, you'll see that there have been some recent updates regarding DEWATS, or Decentralised Wastewater Treatment Systems. However, this is not the only new sewage management strategy that we are going to be utilising for Project Sammaan. While DEWATS is a technology that we find very promising and one that we are confident can become the future model for all sewage management systems, it is expensive (relative to constructing a simple septic tank / soak pit system) and as a model is largely untested in Odisha. Since the very essence of Project Sammaan is to serve as a testing ground for technologies, as well as business models and design, the DEWATS model is being used at a few of the PS facilities in Cuttack and Bhubaneswar to check for any potential points of failure.

Apart from DEWATS, the Project Sammaan sanitation facilities will utilise 'Improved Septic Tank & Soak Pits' as the second sewage treatment system. The so-called IST, is as its name implies an advanced design of the standard septic tank, as seen in thousand of existing toilet facilities across Odisha and India. The changes to the design enable better separation of solid and liquid waste and allow for more controlled leaching of the wastewater into the ground, in a manner that enables a more efficient breakdown of the toxic materials by the microbes in the soil.

The crux of the matter is that the existing sewage management systems are extremely harmful on multiple levels. At the most basic level, they are expensive to build and maintain, because centralised sewage treatment calls for vast initial investment and further continual expenses due to the need for routine collection and maintenance.

Even more deserving of our concern is the negative impact these systems have on our environment. Sewage and effluents in such vast quantities can never be completely cleaned and returned to 'o' levels of toxicity. This means that the current model of centralised treatment brings together hundreds of millions of litres of sewage, treats it to the barest possible level of decontamination and then dumps these same hundreds of millions of litres into water bodies that cannot possibly sustain themselves with this level of contamination being added daily.

This level of ecological damage is unsustainable and, especially in the Indian context, with populations still on the rise, a problem that needs urgent redressal. (See the Scientific American article "India is drowning in its own excreta" for more on the subject)

This is why we feel that it is so vital to experiment with and find newer, 'future-proof' technologies to manage the growing quantities of sewage.

## BLOG HIGHLIGHT:

“Designing a Sewage System for Odisha” by Siddharth Nair



Odisha’s specific environmental considerations, as well as other factors, such as increasing population and large proportion of people living in slums without regular access to water and sanitation, necessitates the design of a sanitation solution that is customised to these constraints.

For Project Sammaan, particularly, it is vital that the sanitation infrastructure designed and deployed as part of the pilot project exemplifies the principles and design ideologies that best meet the needs of the people and the geography of the cities.

Of the various technologies researched and tested for deployment in the sanitation facilities being built as part of Project Sammaan, DEWATS is the system that best addresses the concerns mentioned above and we believe that this system contains the solution for India’s sanitation concerns.

DEWATS (or De-centralized Wastewater Treatment Systems) is a solution that extends beyond mere technology packages to become a technical approach to the sanitation solution.

The DEWATS system has two main advantages over the current sewage management system:

### Treatment at Source

DEWATS is decentralised by definition. It calls for all sewage treatment to be managed at the source, which means that systems can be designed and scaled up according to the demands of the particular location. This means that the sewage treatment solutions are built with a targeted user base whose needs are taken into consideration.

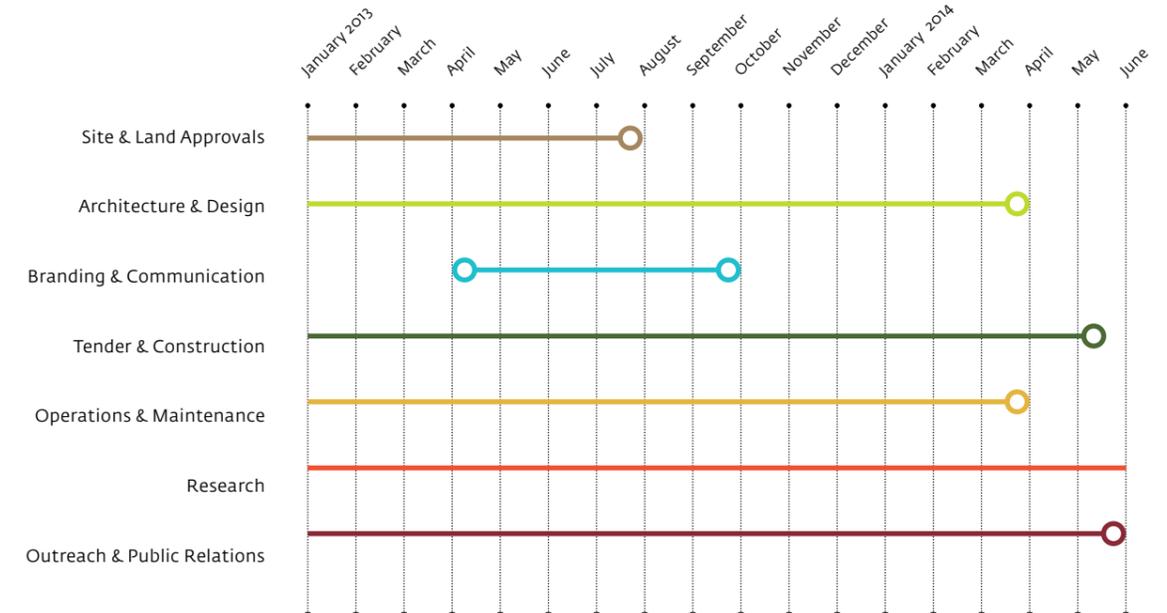
This approach also dramatically reduces one of the most significant costs associated with centralized sewage management: collecting and transporting the sewage from various locations to be treated at one central facility.

### Scalability

DEWATS is a system that is built on a modular approach. This means that the various components can be modified and upgraded independently of each other, in concert with factors such as increasing population or population density in a particular area.

This region-specific customization also reduces the start-up and maintenance costs associated with building a centralised treatment facility since future growth of population and infrastructural development can be addressed in situ and as required. This also reduces the cost of setting up facilities that need to take into account future population growth and, essentially, gamble on the when, where, and how of increasing population, which is, at best, an imprecise science.

## TIME LINE



## MILESTONE OVERVIEW

### To date

- Arkitekno has joined the Project Sammaan team and will be stepping in to assist with the tendering and construction process

### Upcoming

- The Project Sammaan Technical & Design Guidelines document (version 1.0 of the Project Sammaan toolkit) to be submitted to the municipal corporations for review

### June calendar of events

- J-PAL will present O&M business models and maintenance models as well as the facility management models to the principal secretary in the first week of July.
- CTRAN will follow up on the administrative sanction and release of tender for Public Toilets in BMC
- Arkitekno to conduct site visits in both Bhubaneswar and Cuttack
- The first draft of the O&M tender document will be shared with the project team
- Quicksand will ideally submit the draft version of the Technical & Design Guidelines document, pending partner participation

## WORKSTREAMS

### A. Liaisoning & Capacity Building

June was important in terms of liaisoning and capacity building for Project Sammaan. Some of the most important and crucial decision-making meetings with Principal Secretary, Housing & Urban Development Department and the Commissioners of both the Bhubaneswar Municipal Corporation and Cuttack Municipal Corporation were arranged during the month.

The key activities for CMC in the month of June included:

- The nodal officer for Project Sammaan was appointed in Cuttack Municipal Corporation.
- Important discussions led to the generation of inputs on the designs and layouts of the 32 site specific community toilets.
- The Commissioner and other CMC officials' views and opinions regarding the project were documented.
- An important accomplishment was the estimation for the demolition sites, in assistance with the CMC officials on the team's request. The same was pushed through official formalities with the issue of letters to the junior engineer of the respective wards for estimate preparation.
- The plan of action following the approval of the PPR was also discussed. Presentation on the DEWATS system of sewerage technology and the addendum to the PPR in terms of cost following the proposal of the DEWATS submission to CMC was decided.



#### Project Sammaan team at an early strategy session

Bhubaneswar Municipal Corporation was also involved in decision-making events:

- Sub-contracting of the construction work to a Government organisation like OCC or IDCO was proposed.
- Different names, like 'pratik' and 'prayas', were proposed for branding; the Principal Secretary proposed



#### Architectural model of one of the toilet facilities

maintaining the name "Sammaan" for the facilities.

- It was decided that once the administrative sanction by the Government is received, OCC and IDCO would be involved for a detailed discussion.

For site approvals, it was notified that the site selection committee would be sitting on the 21st of June and the team was asked to submit all the proposals prior to that.

#### Activities in July include:

Follow up on the administrative sanction and release of tender for Public Toilets in BMC.

Coordinating for the monthly review meeting with Commissioners of Bhubaneswar Municipal Corporation and Cuttack Municipal Corporation.

Coordinating meeting with Principal Secretary for the presentation on Management Models.

Preparation of feasibility report on the Operations Help Desk to be implemented in BMC and CMC.

Coordinating Site Visits.

### B. Tender & Construction

A significant part of funds for toilet construction in Project Sammaan comes from the government. This entails following a transparent, and government-approved, selection process (a.k.a tendering) for the identification of contractors who will build the Project Sammaan toilets.

The selection process should be legally tenable and will be subjected to public scrutiny. Any mishandling of this process will have serious implications on the project timelines and can put the entire project at standstill. Thus it is incumbent on Project Sammaan to ensure that the entire tendering process is handled with care.

## WORKSTREAMS

Having understood the importance of tendering, the team brought in professional firms to handle the entire tendering process: Feedback Foundation handled the tendering for 27 public toilets in Bhubaneswar and Arkitechno will handle the tendering for 92 community toilets in Bhubaneswar and Cuttack.

The Project Sammaan team initially pushed for a 'Quality and Cost Based System (QCBS)' for tendering process. QCBS ensures that the contractors will be selected on quality and cost basis rather than merely on cost basis. This is an ideal tendering process for an innovative project like Sammaan. However, BMC officials insisted on an 'L1 Tender' process, due to their existing auditing procedures. This implies that contractors are selected based only on the cost parameters. This means that whoever bids the lowest cost for construction based on the defined technical specifications will be selected.

As this is a tender with value more than 5 Million INR, it needs to be approved by the Principal Secretary, who is the head of Housing & Urban Development department, Government of Odisha. The BMC has sent the tender files to the Principal Secretary for administrative approval, which the project team is currently waiting for.



#### An improvised toilet near one of the planned Project Sammaan toilet sites

For the 27 Public Toilets in Bhubaneswar, the Project Sammaan team worked closely with the BMC to submit all the documents required for the construction tender. Post approval from the BMC, the documents were sent to the Housing & Urban Development Department of the Odisha Government for approval. The Project Sammaan team met with the designated officer in charge of examining the documents in a day long meeting on June 21st, to clarify various questions and ensure that the tender drawings are ready to be released for bids.

#### Activities in July include:

- Architekno to conduct site visits in both Bhubaneswar and Cuttack

### D. Research

During the month of June, J-PAL's field work in Bhubaneswar focussed on completing the on-going census survey, and identifying additional communities in Bhubaneswar for proposed community sanitation facilities. So far, J-PAL has collected data in close to 80 community locations.



#### A research field visit with some of the target audience

With assistance from the Amins, other BMC officials, and partner organizations, J-PAL successfully identified new community sites. These sites, along with land details and sketch maps, were submitted to the BMC's Recovery Officer. The land details were taken up by the land approval committee of the Government of Odisha for approval. J-PAL has been working on delineating a detailed Operations and Management framework for the proposed toilet facilities. J-PAL also worked on.

#### Activities in July include:

- Complete census activities in additional Bhubaneswar sites
- Planning for baseline survey

### E. Architecture and Design

There are base and enhanced layer toilets that will be built in Bhubaneswar and Cuttack. The base layer toilets have the following gender-segregated facilities: urinals (for men), toilet booths, hand and foot washing stations, washing areas, childrens' toilet booths, menstrual waste incineration facilities (for women), in addition to a caretaker's booth and a universal access toilet booth.

## WORKSTREAMS

The enhanced layer toilets have bathing stalls (segregated by gender) and retail facilities, in addition to all the facilities in the base layer toilets.

There are 10 different typologies that will be deployed across the 32 sites in Cuttack. The breakdown is as follows:

- 8 Two-Seater Very Small,
- 3 Two-Seater Base Layer,
- 5 Four-Seater Base Layer,
- 1 Four-Seater Enhanced Layer,
- 2 Six-Seater Base layer,
- 3 Six-Seater Enhanced Layer,
- 3 Eight-Seater Base Layer,
- 1 Ten-Seater base Layer,
- 5 Twelve-Seater Base Layer, and
- 1 Twelve-Seater Enhanced Layer.

In Bhubaneswar there will be 3 additional typologies that will be deployed: Two-seater Enhanced layer, Eight-seater Enhanced Layer, and Ten-seater enhanced layer.

These designs have been presented to both the BMC and CMC, and the concerned officials were taken through all the planned facilities in great detail. Post approval on the designs, Anagram Architects has now started work on preparing the tender drawings for Cuttack. Also, The Consortium for DEWATS Dissemination (CDD) and AA are working together to ensure that the sewage treatment plans are incorporated into the architectural workstream of preparing tender drawings for the various typologies that will be deployed in Cuttack. Since multiple streams of work have to work together in order to create the tender drawings, the whole team is working closely together to align their respective workstreams and ensure that we have the tender drawings ready as soon as possible.

### F. Outreach & Public Relations

June saw a variety of activities on several different communications streams. Most significantly, the project's profile was added to the SuSanA website, worked continued on the initial draft version of the work-in-progress Technical & Design Guidelines document, and a series of project partner profile videos planned out.

The Sustainable Sanitation Alliance (SuSanA) is a network of organizations working in sustainable sanitation formed in 2007. Its purpose is to act as a forum for those working in the sanitation to share their work while promoting awareness and, hopefully, fostering collaboration

amongst members and other interested parties. Currently a project brief and issues of the newsletter have been shared on the site. Going forward, we will contribute photographs and additional documents to continue promotional efforts for the project.



### Ryan and Kevin from Quicksand work on the Project Sammaan newsletter

The Technical & Design Guidelines document acts as a repository for all Project Sammaan related information, from its genesis through to the specific steps taken along the way. Though a work-in-progress document that will be constantly updated as the project progresses, the team feels it important to share a draft as soon as possible in order to highlight the efforts made thus far. This document will also act as the preliminary version of the project toolkit, one of the key deliverables for the grant.

Unfortunately, contributions from project partners have not been forthcoming causing the release of this draft version to be delayed.

A series of project partner profile films have been storyboarded and interview guides prepared and shared with the team. These films will highlight each organization that is part of the project and the work that they are doing on Sammaan. These will be rolled out in the coming months, with the intention of releasing one per month beginning in August or September.

#### Activities in July include:

- Continued efforts to complete the Technical & Design Guidelines document
- Planning for the project partner profile series
- Adding project-related documents and images to the SuSanA website

## CONCLUSION



June was yet another chaotic, and productive, month with the project team's ranks swelling as the Arkitechno team came on board to help with the Tender and Construction processes, activities continued on the preparation of both the Preliminary Project Report and Technical & Design Guidelines documents, architectural design typologies finalized and configured to incorporate DEWATS wherever possible, and the facility branding decided upon.

July will be just as frenetic, especially once the tenders are formally released. Workstreams that, up to this point, had been rather segregated will now overlap as pre-construction activities commence. All of the efforts that went into identifying and vetting sites, designing facilities to accommodate innovative sewage systems and plot sizes, crafting an identity for the toilets, and engaging with the community have led the team to this point, with groundbreaking inching ever-nearer. It's an exciting time for the project, but one that requires all efforts to be redoubled to ensure it stays on track.



The Abdul Latif Jameel Poverty Action Lab (J-PAL) is a network of 70 affiliated professors around the world who are united by their use of Randomized Evaluations (REs) to answer questions critical to poverty alleviation. J-PAL's mission is to reduce poverty by ensuring that policy is based on scientific evidence.

J-PAL is the primary grantee and the project's principal investigators and are designing and conducting the monitoring and evaluation for the facilities:

- » Business model development
- » Operations and Maintenance modelling
- » Project evaluation



A multi-disciplinary innovation consultancy that places user-centered design principles at the core of every innovation effort. The studio has successfully delivered on several new services, products, brands and developmental strategies, creating both measurable social and business impact.

Quicksand is responsible for project management as well as anchoring the hardware design process for the project:

- » User-experience research and corresponding hardware design
- » Design, branding and communication project management
- » Project toolkit and website development



CTRAN Consulting Manages large, complex development projects, providing the right mix of program management and technical assistance.

They are the one-point contact for interfacing with various government agencies:

- » Establish a Project Management Office within the two municipal corporations to ensure continued, and future, use and grievance redressal of the facilities
- » Facilitate meetings with government representatives
- » Assist in land approval process
- » Set up and operate the help line that ensures proper functioning of the facilities

## CODESIGN

A brand and communication design studio whose expertise lies in bridging the gap between product and service offerings and what end-users really care about, with communication that is meaningful and relevant.

Codesign is the communication and brand consultant for Project Sammaan.

- » Ensure facility related branding and communication is contextually relevant and encourages behaviour change and adoption
- » Develop the facility identity and corresponding collateral that promotes larger goals of sanitation and health for better life
- » Creating facility signage that is functional and facilitates access and experience



The municipal corporations of the pilot cities Bhubaneswar and Cuttack. These entities are tasked with providing services in sectors such as Health & Sanitation, Slum Development, Urban Planning, and Waste Management to improve the quality of life of their respective citizenries.

The local municipal corporations are key partners in the project and aid in the facilitation of its various components:

- » Provide funding for construction and infrastructure
- » Site selection assistance
- » Identify contractors for construction
- » Ensure regular water, electricity, and sewerage facilities for the toilets
- » Manage sewerage and waste treatment systems
- » Oversee functioning of facilities through a PMO until capacity-building with the BMC is complete
- » Provision of temporary sanitation facilities
- » Ensuring long-term sustainability of the project



An award-winning consultancy internationally recognized as amongst the top emerging practices in the world with a commitment towards delivering innovative, context specific designs that encourage sustainable lifestyles. Anagram Architects is a full spectrum spatial design consultancy firm that offers expertise in urbanism, architecture, interior design, and research.

They are leading the architectural design of the 119 facilities:

- » Provide site-specific architectural designs
- » Consult on waste management issues
- » Oversee facility construction



The Centre for Advocacy and Research (CFAR) is an Indian organization committed to working and partnering with marginal communities. It has expertise in conducting research, process documentation, capacity building and strengthening advocacy by leveraging media and networking to shape and impact policy issues related to urban poor.

CFAR is actively involved in facilitating community interactions in the field:

- » Social mapping of each slum
- » Community engagement and dialogue during design and construction phases
- » Facility management training for community members



Arkitechno Consultants (India) Pvt. Ltd is a multi-disciplinary firm of consultant engineers offering a full array of consultancy services ranging from concept to implementation. This includes: environmental & social planning, feasibility studies, design review & construction supervision, operations & maintenance and project management consultancy for infrastructure projects, and many others.

They are the main project managers for on-field activities:

- » Tendering
- » Facility construction management



QUICKSAND