

## Construção de Reservatório de Água no Alto de Santa Catarina Alto de Santa Catarina, Oeiras

**Water tank with 7,5000 m3 capacity, in reinforced concrete  
Alto de Santa Catarina, Oeiras (Portugal)**

### Description of Work

Construction of a new tank in reinforced concrete, consisting of two cells of 5,000 m<sup>3</sup> each, next to the existing Final Reservoir of the Western Adductor. It is a reservoir made up of two square-shaped cells with a unit capacity of 5000 m<sup>3</sup> to store drinking water.

The main works in this endeavor are as follows:

- Earthmoving works with emphasis on rock excavation;
- Construction works in reinforced concrete;
- Supply and installation of carbon steel pipes and electromechanical equipment;
- Supply, assembly in cast iron piping (FFD) in ditch;
- Execution of rainwater drainage;
- Execution of connections to existing hydraulic circuits;
- Electrical, instrumentation and safety installations;
- Installation of a telemanagement system;
- Exterior arrangements.

The contract included the supply and assembly of all associated electromechanical equipment.

### Main quantities

**Excavation** 4500 m<sup>3</sup>

**Structural fill** of the cell foundation, switching chamber and access road 10,000 m<sup>3</sup>

**Landscaping** of the enclosure perimeter 11,500 m<sup>3</sup>

**Cyclopean concrete** to reinforce the cell foundation and maneuvering chamber 2500 m<sup>3</sup>

**Structural Concrete** C35/45 XC4 and C40/50 XA2 1800 m<sup>3</sup>

**Cleaning concrete** for leveling foundations 200 m<sup>3</sup>

**Concrete reinforcement** 240,000 kg

**Formwork** 6000 m<sup>2</sup>

**Interior waterproofing** of the entire Reservoir (2 cells) 5000 m<sup>2</sup>



### Resumo da Obra

#### Work Summary

|                    |                                  |                     |
|--------------------|----------------------------------|---------------------|
| Cliente            | <b>SIMAS Oeiras e Amadora</b>    | Client              |
| Tipo de contrato   | <b>Valor Global<br/>Lump Sum</b> | Contract type       |
| Data de construção | <b>2021-2023</b>                 | Construction period |
| Custo              | <b>EUR 2.048.910,91</b>          | Cost                |



## Construção de um Depósito de Água com 5.000 m<sup>3</sup> de capacidade Alto do Cotão, Cacém (Sintra)

**Water tank with 5,000 m<sup>3</sup> capacity, in reinforced concrete  
Alto do Cotão, Cacém (Portugal)**

### Trabalhos Efectuados

Foi adjudicada à Seth a empreitada da construção da 3.<sup>a</sup> célula de 5.000 m<sup>3</sup> do reservatório do Alto do Cotão, na freguesia do Cacém, concelho de Sintra.

Com um prazo de execução de 7 meses (210 dias) os trabalhos envolveram a execução de sondagens, movimentação geral de terras, estruturas em betão armado, tubagens e acessórios.

A solução encontrada para o reservatório, foi a execução de um reservatório pré-fabricado com 55 m de comprimento por 17 m de largura, de modo a aproveitar a área disponível para o efeito.

A localização e o tipologia do terreno, obrigou ao saneamento das fundações e a execução de betão ciclópico para garantir a cota de soleira do depósito.

Foram executadas obras de drenagens diversas, arranjos exteriores e pavimentações.

Os trabalhos incluem ainda a ligação às condutas adutoras e de distribuição, bem como todos os acessórios e válvula da caixa de manobras.

### Description of Works

Seth was awarded the contract for the construction of the 3<sup>rd</sup> cell of 5,000 m<sup>3</sup> of the "Alto do Cotão" reservoir, in the parish of Cacém, municipality of Sintra.

With an execution period of 7 months (210 days), the works involved the execution of surveys, general earthworks, reinforced concrete structures, pipes and accessories.

The solution found for the reservoir was the construction of a prefabricated reservoir measuring 55 m long by 17 m wide, in order to take advantage of the available area for implementation.

The location and type of land required the sanitation of the foundations and the execution of cyclopean concrete to guarantee the threshold level of the deposit.

Various drainage works, exterior repairs and paving were carried out.

The works also include the connection to the supply and distribution ducts, as well as all the accessories and valve of the control box.

### Principais quantidades / Main Quantities:

**Escavação / Excavation: 5.400 m<sup>3</sup>**

**Aterro / Landfill: 1.500m<sup>3</sup>**

**Betão estrutural C40/50 / Structural Concrete: 400 m<sup>3</sup>**

**Betão Ciclópico C16/20 / Cyclopic Concrete: 650 m<sup>3</sup>**

**Armadura de construção / Construction Armor: 50.000 Kg**

**Reservatório Pré-Fabricado / Pre-fabricated Reservoir: 5000 m<sup>3</sup>**



### Resumo da Obra

#### Work Summary

|                    |  |                     |
|--------------------|--|---------------------|
| Cliente            | <b>Marfer / Universidade Católica /<br/>/ Montepio / Cacém Construções</b> | Client              |
| Tipo de contrato   | <b>Valor Global / Lump Sum</b>   | Contract type       |
| Data de construção | <b>2021-2022</b>   | Construction period |
| Custo              | <b>EUR 1.019.265,05</b>  | Cost                |

## Nova Reserva do Barlavento – Depósitos de Água Espargal (Freguesia de S. Sebastião, Município de Lagos), Portugal

### New Barlavento Water Tank Reserve at Northwest Faro Espargal (S. Sebastião, Lagos), Portugal

#### Descrição dos Trabalhos

Construção de um novo reservatório em betão armado, para água potável, composto por duas células de planta quadrada com capacidade unitária de 5.000m<sup>3</sup> cada, junto ao Reservatório Final do Adutor Ocidental já existente.

Nesta empreitada, os principais trabalhos foram os seguintes:

- Movimentação de terras com destaque à escavação em rocha;
- Trabalhos de construção em betão armado;
- Fornecimento, instalação de tubagens em aço carbono e equipamento eletromecânico;
- Fornecimento/montagem de tubagem ferro fundido (FFD) em vala;
- Execução de drenagens pluviais;
- Execução de ligações a circuitos hidráulicos existentes;
- Instalações elétricas, de instrumentação e de segurança;
- Instalação de Sistema de Telegestão;
- Arranjos exteriores.

Foi incluído na empreitada o fornecimento e montagem de todo o equipamento eletromecânico associado.

#### Principais quantidades / Main Quantities

Escavação geral / General Excavation – 13.640 m<sup>3</sup>

Betão C30/37 / Concrete type C30/37 – 3.135,00 m<sup>3</sup>

Peso total das armaduras / Total weight of steel – 377 ton

Área total de cofragem / Total formwork area – 9.450 m<sup>2</sup>

#### Description of Work

Construction of a new water tank in reinforced concrete, consisting of two square-shaped cells with a unit capacity of 5,000 m<sup>3</sup> each one, next to the existing Final Reservoir of the Western Adductor.

The main works in this endeavor are as follows:

- Earthmoving works with emphasis on rock excavation;
- Construction works in reinforced concrete;
- Supply and installation of carbon steel pipes and electromechanical equipment;
- Supply, assembly in cast iron piping (FFD) in ditch;
- Execution of rainwater drainage;
- Execution of connections to existing hydraulic circuits;
- Electrical, instrumentation and safety installations;
- Installation of a tele-management system;
- Exterior arrangements.

The contract included the supply and assembly of all associated electromechanical equipment.



#### Resumo da Obra

##### Work Summary

Cliente **Águas do Algarve, SA**  
 Tipo de contrato **Valor Global**  
 Data de construção **2020 – 2022**  
 Custo **EUR 2.565.000,00**

Customer  
 Type of Contract  
 Construction date  
 Cost

## Dessulfurização da Central Termoelétrica de Sines EDP – Refinaria de Sines, Portugal

### *Civil Works for Desulphurization Plant, at the Thermoelectric Power Plant, Sines EDP Sines – Portugal*

#### Work Carried Out

The desulphurisation project for the Sines Thermoelectric Power Station consists of implementation of four limestone/gypsum wet flue gas desulphurisation (wet FGD) units, one for each of the respective electricity generators. The desulphurisation process basically consists of removal of the SO<sub>2</sub> from the combustion gases through reaction with an alkaline absorbent, obtaining gypsum as a sub-product.

The main components of the desulphurisation system are indicated hereunder, complete with the associated civils:

**Combustion Gas System:** construction of ventilator foundations and reinforced-concrete pipeline supports.

**SO<sub>2</sub> Absorption System:** foundations of the absorbers, pumping wells, sundry foundations for equipment.

**Limestone Storage System:** very large foundation for two steel limestone tanks, three foundations for ball mills, well to house the limestone unloading system and conveyor belt for transport to the tanks, all the surrounding building and foundations for various items of equipment.

**Gypsum Storage System:** construction of a reinforced-concrete silo, diameter Ø24 m, height 40 m, capacity 9,000 m<sup>3</sup>.

**Desulphurisation Liquid Effluent Treatment System:** construction of 2 decantation tanks, 10 square tanks, sludge building, electrical building and sundry retention basins.

**Ancillary Energy Systems:** building for an ancillary boiler and sundry basins. Electrical and Central Command Building: construction of a building with basement to house the electrical switchboards, laboratory, command and control room, etc.

**Compressed Air Systems:** construction to four buildings next to the generators to provide compressed air to the desulphurisation system. To support the sundry pipework a Pipe Rack was build from the 4 units to what is known as the common zone.

Ancillary work included sundry drainage, landscaping and paving.

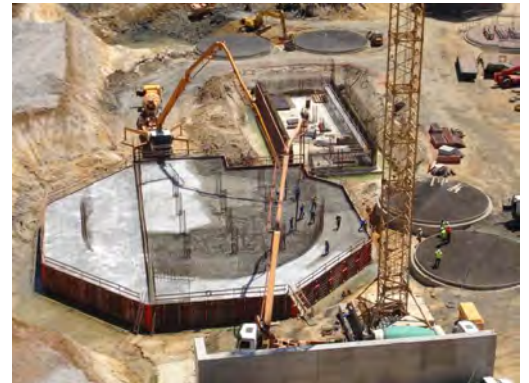
#### Major Quantities:

**Excavation:** 160,000 m<sup>3</sup> / **Landfill:** 95,000 m<sup>3</sup>

**Structural concrete C35/45:** 25,000 m<sup>3</sup>

**Lean concrete C12/15:** 8,500 m<sup>3</sup> / **Formwork:** 48.000m<sup>2</sup>

**Construction rebar:** 2,600,000 kg / **Sundry steel elements:** 400,000 kg



#### Resumo da Obra

##### *Work Summary*

|                    |                                  |                            |
|--------------------|----------------------------------|----------------------------|
| Cliente            | <b>Consórcio Hitachi - Coba</b>  | <i>Client</i>              |
| Tipo de contrato   | <b>Valor Global<br/>Lump Sum</b> | <i>Contract type</i>       |
| Data de construção | <b>2005-2008</b>                 | <i>Construction period</i> |
| Custo              | <b>EUR 14.000.000,00</b>         | <i>Cost</i>                |