

European Spallation Source IKON 19 – Bifrost Hutch

Liam Whitelegg

Lead Instrument Engineer

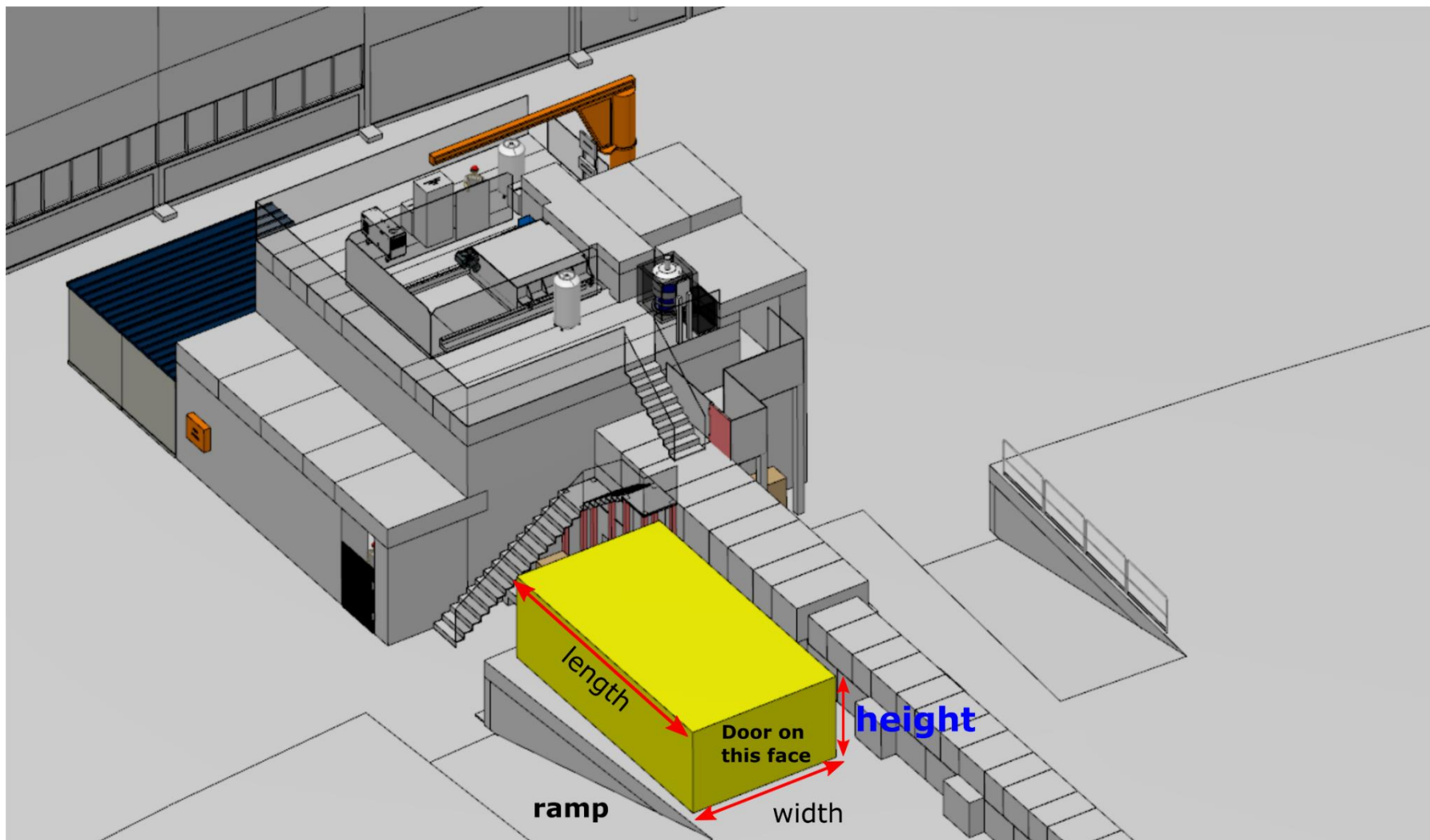
European Spallation Source ERIC

25-09-20

Agenda

- Tendering Process
- Offered Solution
- TG-3/IRR
- Installation Issues
- Progress
- Next Steps

Rough Concept



Tendering Process

- Went out to tender through DTU's procurement system – July 19
- Invited companies directly but received one bid;
 - 37k€ from large Copenhagen company
- Before signing contract, we informed them of ESS safety aspects - SS-EN 50110 and SE National Board
- Company went quiet and became quite difficult to speak to
- Introduced to Skanska Direct and asked them to bid. Initially refused due to spec
- Sat down with them and discussed requirements
- Received a bid of 25k€ and quick timeline
- Installation team would be workers already based on site

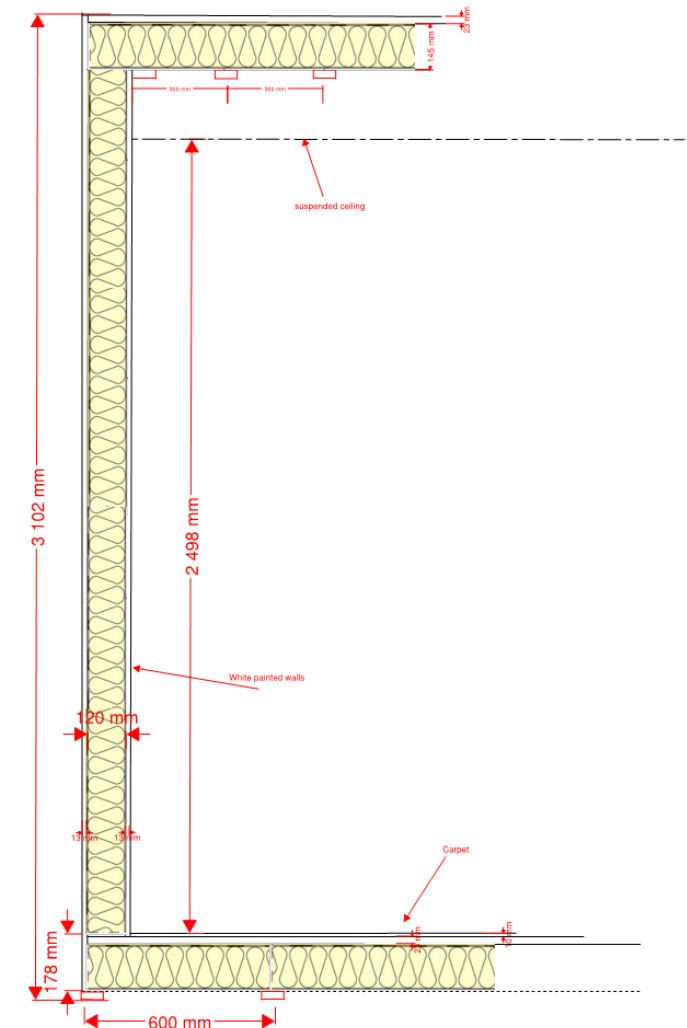
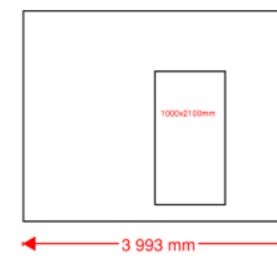
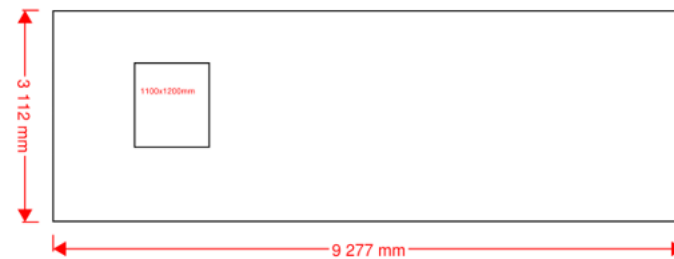
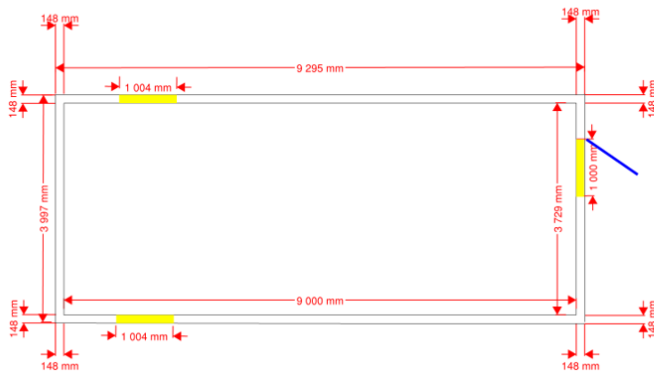


Summary

This document specifies the requirements for the Bifrost Control Office, due to be installed on the European Spallation Source in Sweden. The office is to be installed in the guide hall, where transportation of material is only possible via 30-ton forklift.

Offered Solution

- Solution would be rectangular footprint cabin based in E02
- Walls would be constructed from wooden beams and plasterboard
- False ceiling and carpets installed. Insulation around unit
- Electrical system installed – Power sockets, lighting, network sockets
- Two windows down the far end. Door opening to E02
- Ventilation system
- Unit painted white inside, bluey colour outside
- No crane available. Built up on site and then air skates to position



IRR (& Pre-IRR)

- Not so simple to get documentation in timely manner
- Needed RAMS and schedule from supplier to fill out binder
- Information wasn't ready for IRR so it became a pre-IRR
- A few iterations required for RAMS to be accepted
- Fire safety rejected a component during IRR process
- IRR formally accepted two days before scheduled install

Projekt	Märkning:	Upprättad av:	Datum:	Rev.datum:	Rev.kommentar:
ESS Hutches	203865-356	C.J.	2020-01-30		
Aktivitet	Vecka:7	Vecka:8	Vecka:9	Vecka:10	Vecka:11
	Mån Tis Ons Tor Fre	Mån Tis Ons Tor Fre	Mån Tis Ons Tor Fre	Mån Tis Ons Tor Fre	Mån Tis Ons Tor Fre
Establishment (Rigging Team moving material)	X				
Framework	X X X X				
Assembly framework		X			
Preparation electrical work		X			
Insulation and gypsum walls		X X			
Mounting windows and door			X		
Painting			X X X		
Mounting boards, carpet and fittings				X	
Suspended ceiling				X	X
Assembly electrical works				X X	
Moving hutch (Rigging team)					X
Assembly ventilation					X
Extra day for touch up					X

Pages / ... / BIFROST - Installation binders

ib244 - 13.6.14 - Bifrost Control Hutch

Created by Liam Whitelegg, last modified on Jan 20, 2020

Binder name	ib244 - Bifrost Control Hutch Installation
Binder ID	ib244
Created	20 Jan 2020
Description	Binder for the installation of the Bifrost Control Hutch in E02

- [ib244 - 01 List of Documents](#)
- [ib244 - 02 Scope of Work](#)
- [ib244 - 03 Organisation](#)
- [ib244 - 04 Time Schedule](#)
- [ib244 - 05 Risk Assessment Method Statement \(RAMS\)](#)
- [ib244 - 06 Temporary Services](#)
- [ib244 - 07 Drawings](#)
- [ib244 - 08 Installation Procedures](#)
- [ib244 - 09 Work Permits](#)
- [ib244 - 10 Daily Diary](#)
- [ib244 - 11 Non-Conformity Report \(NCR\)](#)
- [ib244 - 12 QC - Installation & Test Documentation](#)
- [ib244 - 13 List of Components & Material](#)
- [ib244 - 14 Reference Documents](#)
- [ib244 - 15 Installation Finalization](#)
- [ib244 - Binder Versions](#)

Below, the checklist to used for the IRR. Fill in checklist during the IRR and attach the updated c

Installation Pics



Installation Pics



Installation Pics



Installation Pics



Installation Pics



Installation Pics



- Currently on 5 violations/issues/accidents in 3 weeks of installation
 - Wrong colour helmet
 - Reported miss-use of equipment
 - Work not fully covered by RAMS
 - Slip from scaffold
 - Working without full PPE
- Distance from office to construction site a barrier to supervision
- Focus on installation activities in sparse areas
- Getting electrical drawings from supplier

- Hutch to be complete by the end of next week
- Furniture to be installed in future months
- Difficult to get companies to bid
 - Barrier to smaller companies performing small projects on site
- IRR's involve effort (if unprepared)
- Monitoring installation work takes a surprising amount of energy
- Work completed on schedule
- Electrical certificates (Self-Inspections provided)
- Happy with final product
- Important to be aware of all requirements