

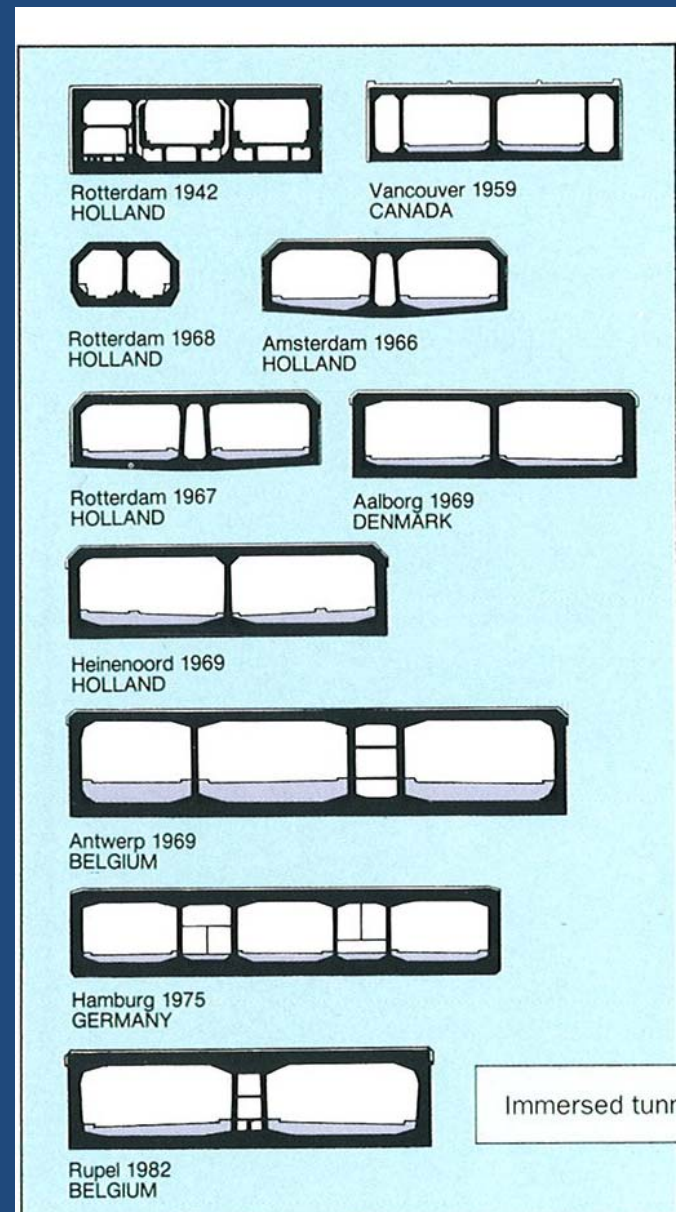
# DFTU 25th anniversary 02 oktober 2008

Et liv med tunneler  
(bl.a.)

Peter Lundhus  
Adm. Dir. Femern Bælt A/S

# Christiani & Nielsen

## Immersed tunnel pioner



# Rupel Tunnel

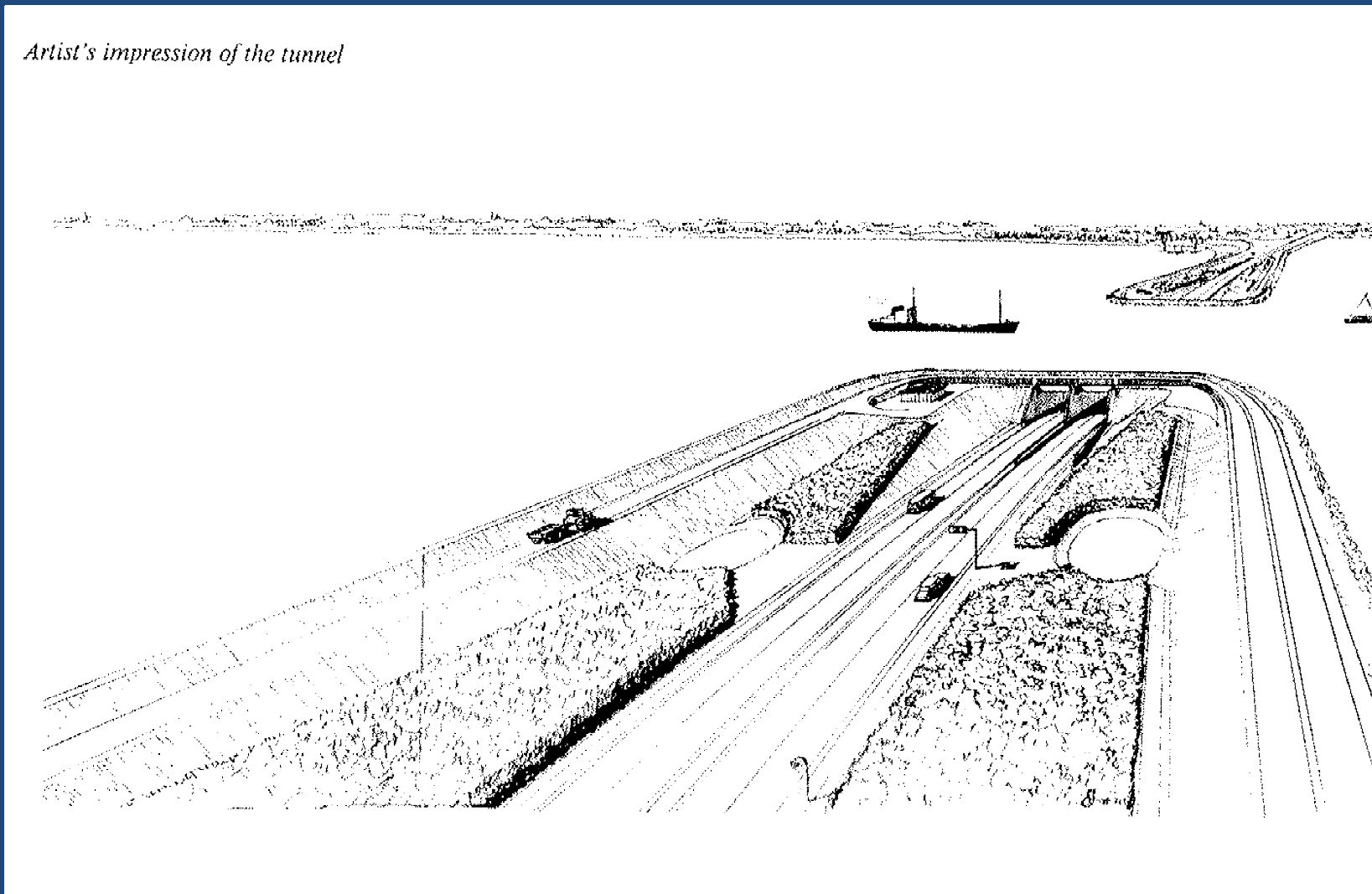


02 oktober 2008

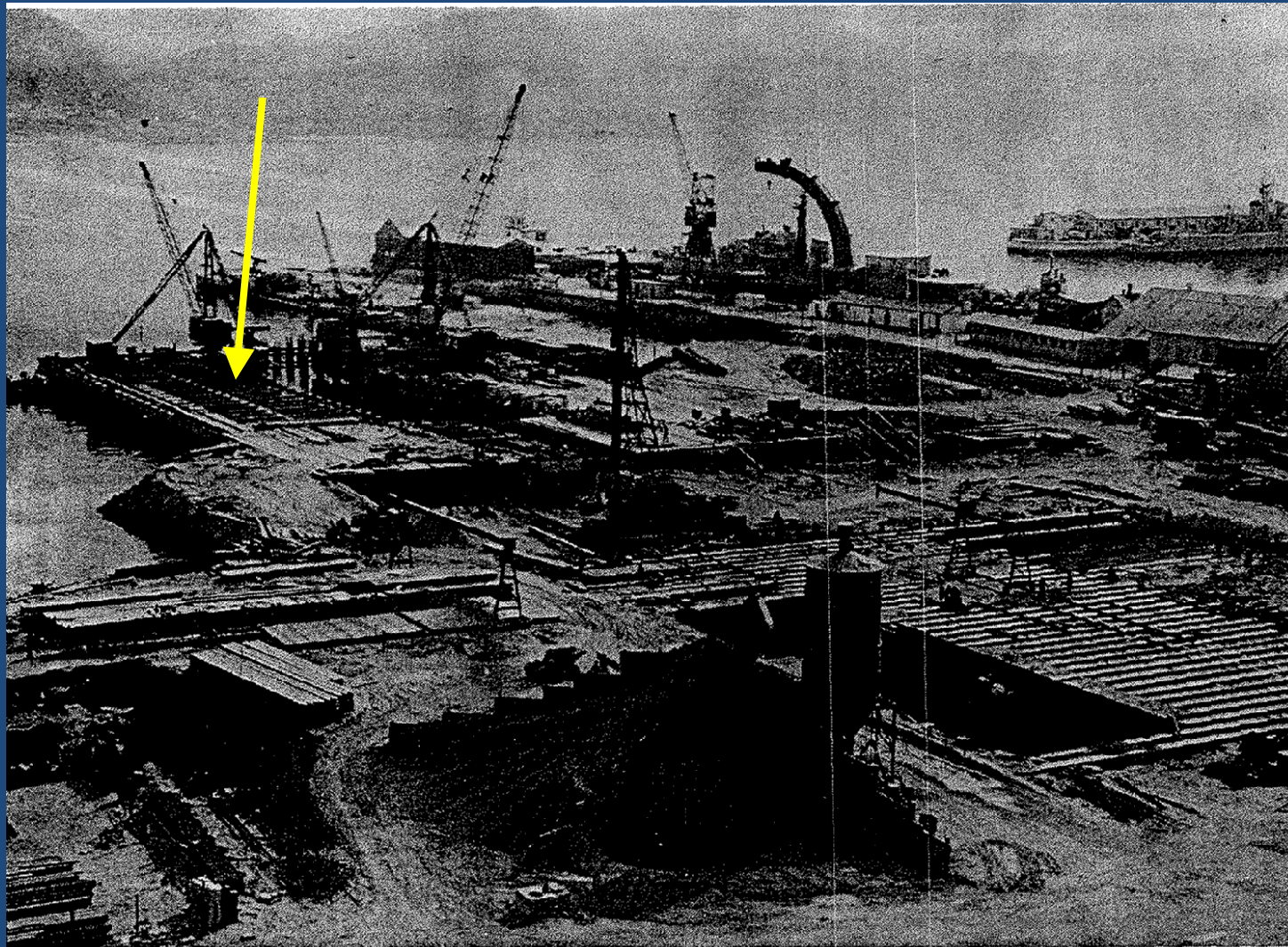
DFTU 25 år – Peter Lundhus

# 1988 Guldborgsund tunnel, 460 m

*Artist's impression of the tunnel*

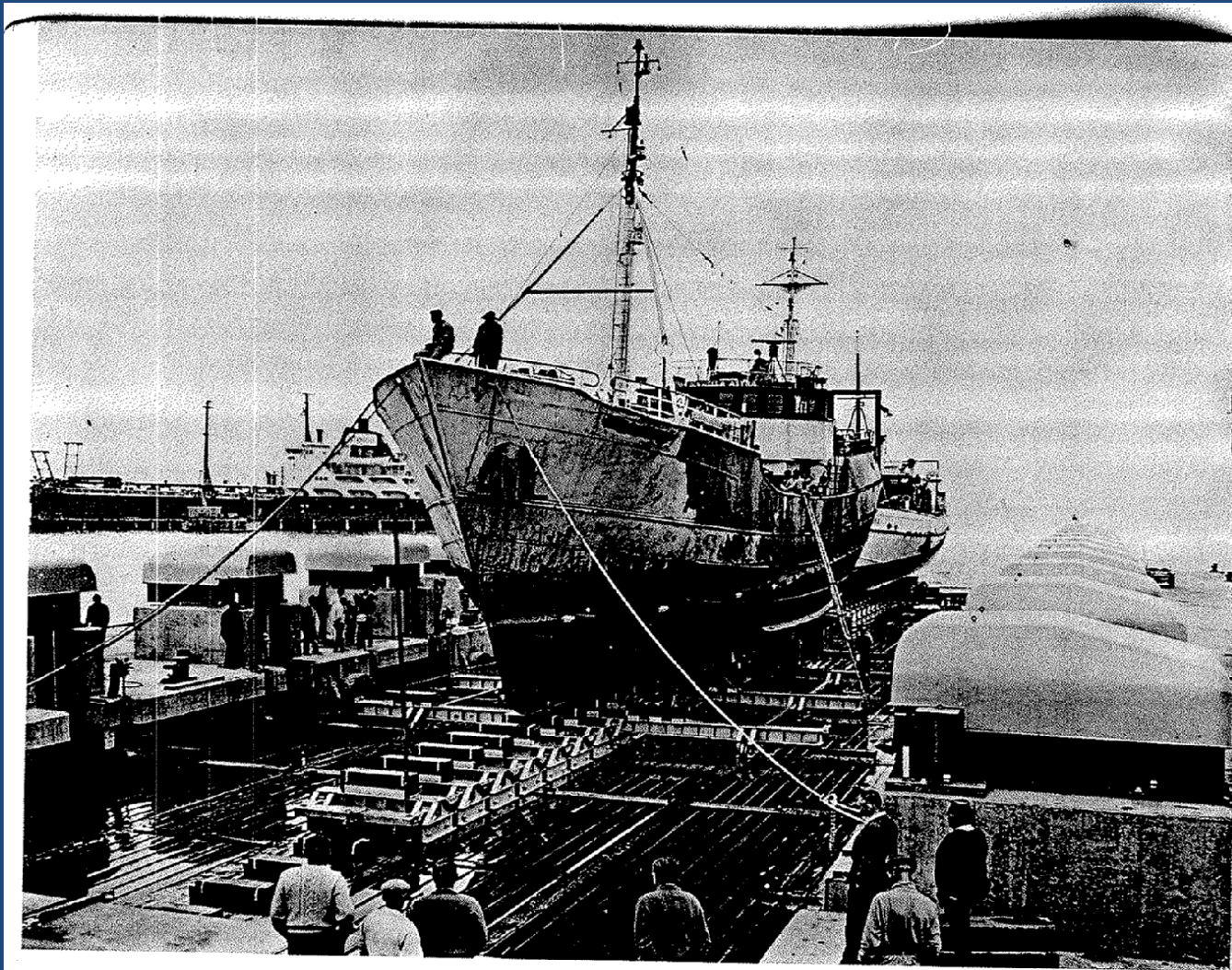


# 1969 Simonstown – Min første Syncrolift



**O.N. 47374: Marine Lift, Simonstown - A recent view of the site by courtesy of the S.A. Navy.**

# 1971 Walvis Bay – Min anden Syncrolift



O.N. 47744 - 2000 TON SYNCROLIFT WALVIS BAY

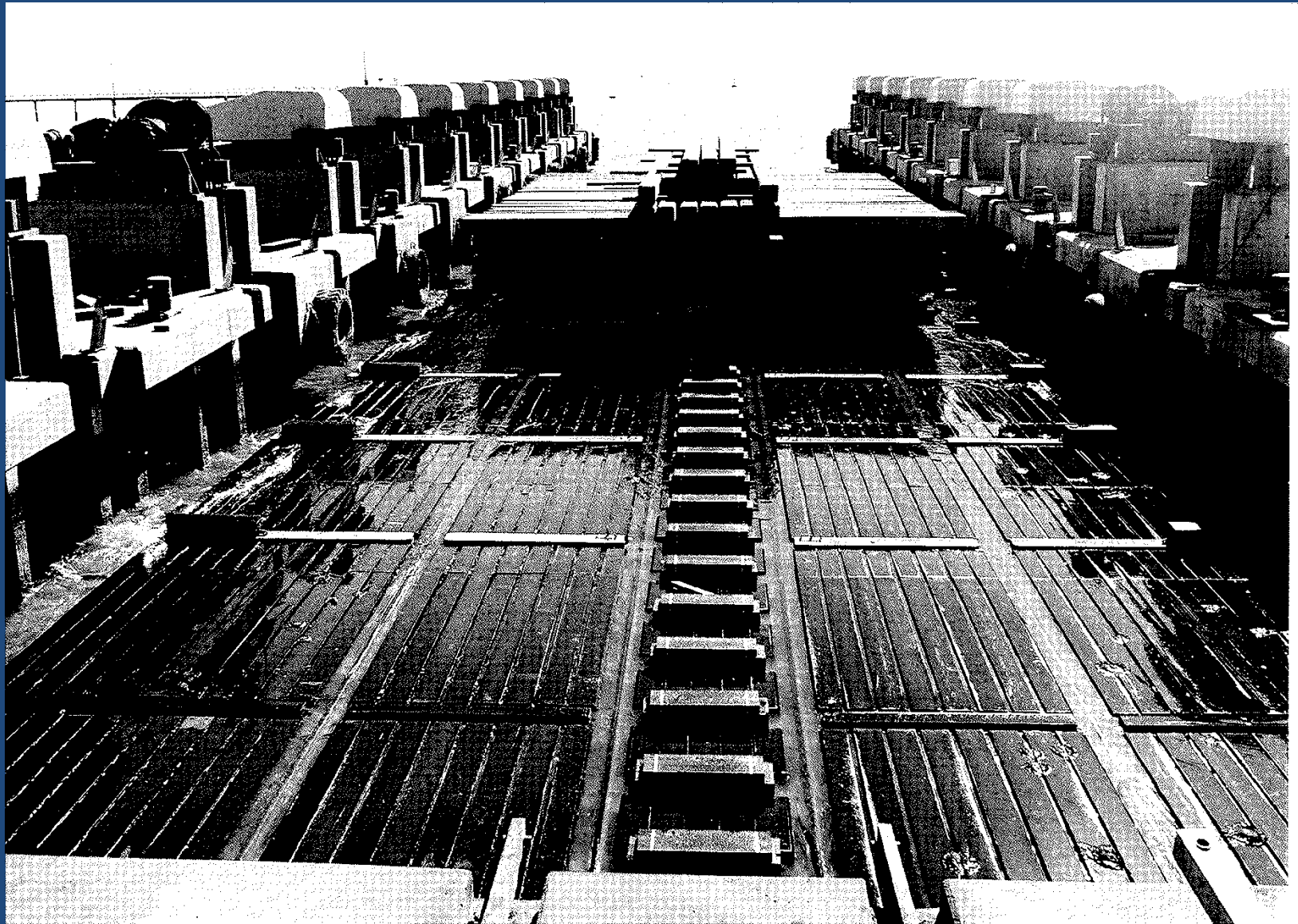
# Walvis Bay – Namibia



02 oktober 2008

DFTU 25 år – Peter Lundhus

# Walvis Bay – Testing 2000 T Syncrolift (kodeord)

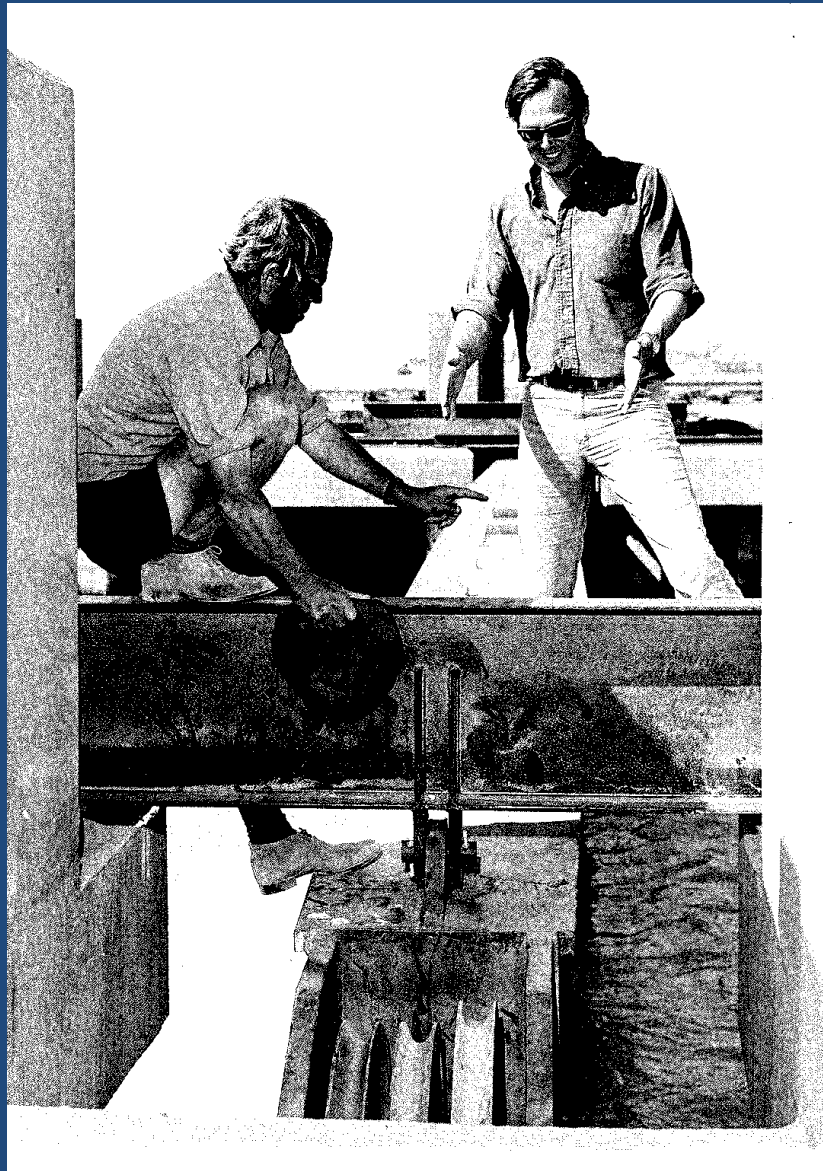


02 oktober 2008

DFTU 25 år – Peter Lundhus



# 1970 Walvis Bay - Den unge projektchef



02 oktober 2008

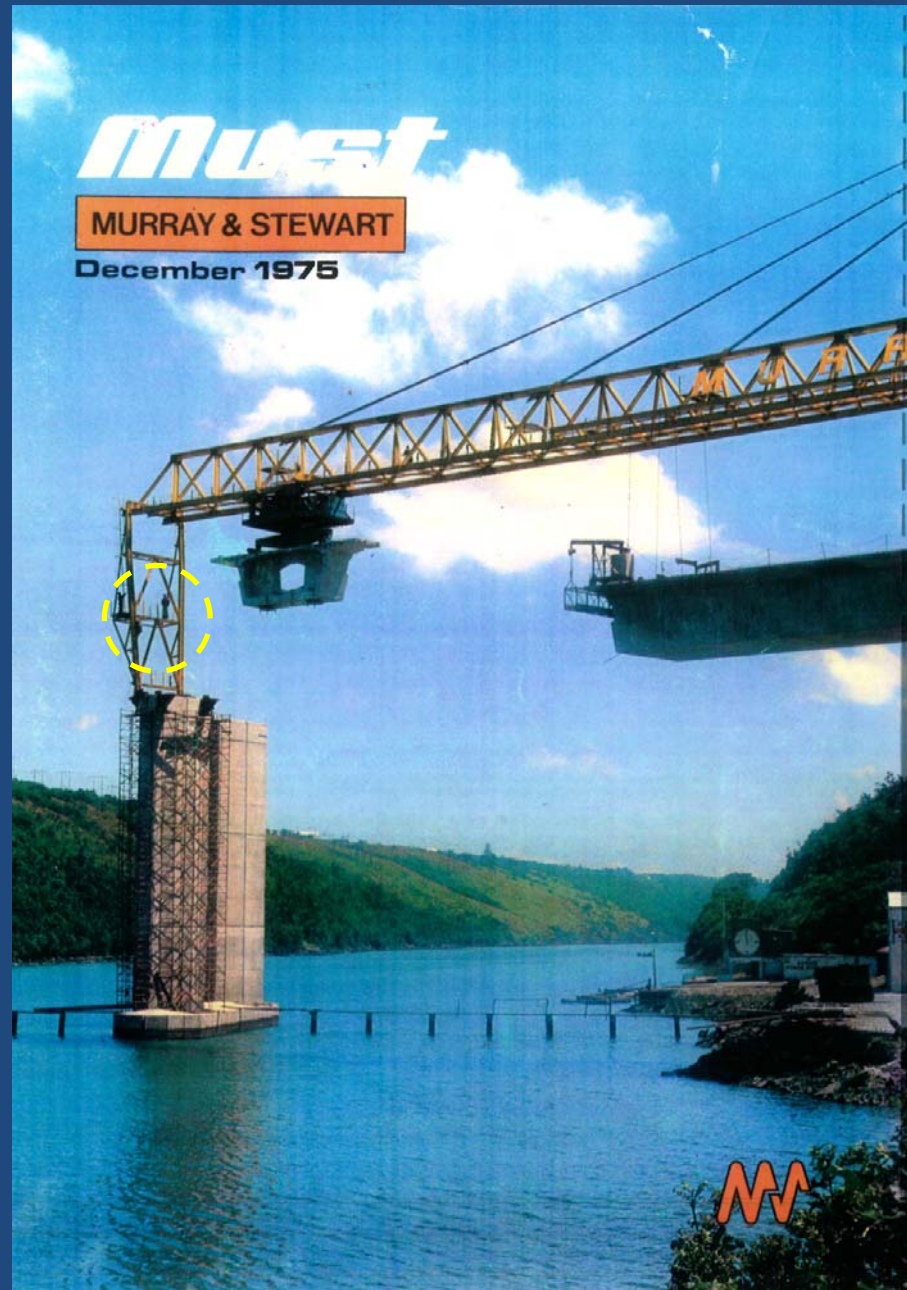
DFTU 25 år - Peter Lundhus

# 1970 Walvis Bay – Verdens og byens Centrum



02 oktober 2008

DFTU 25 år – Peter Lundhus



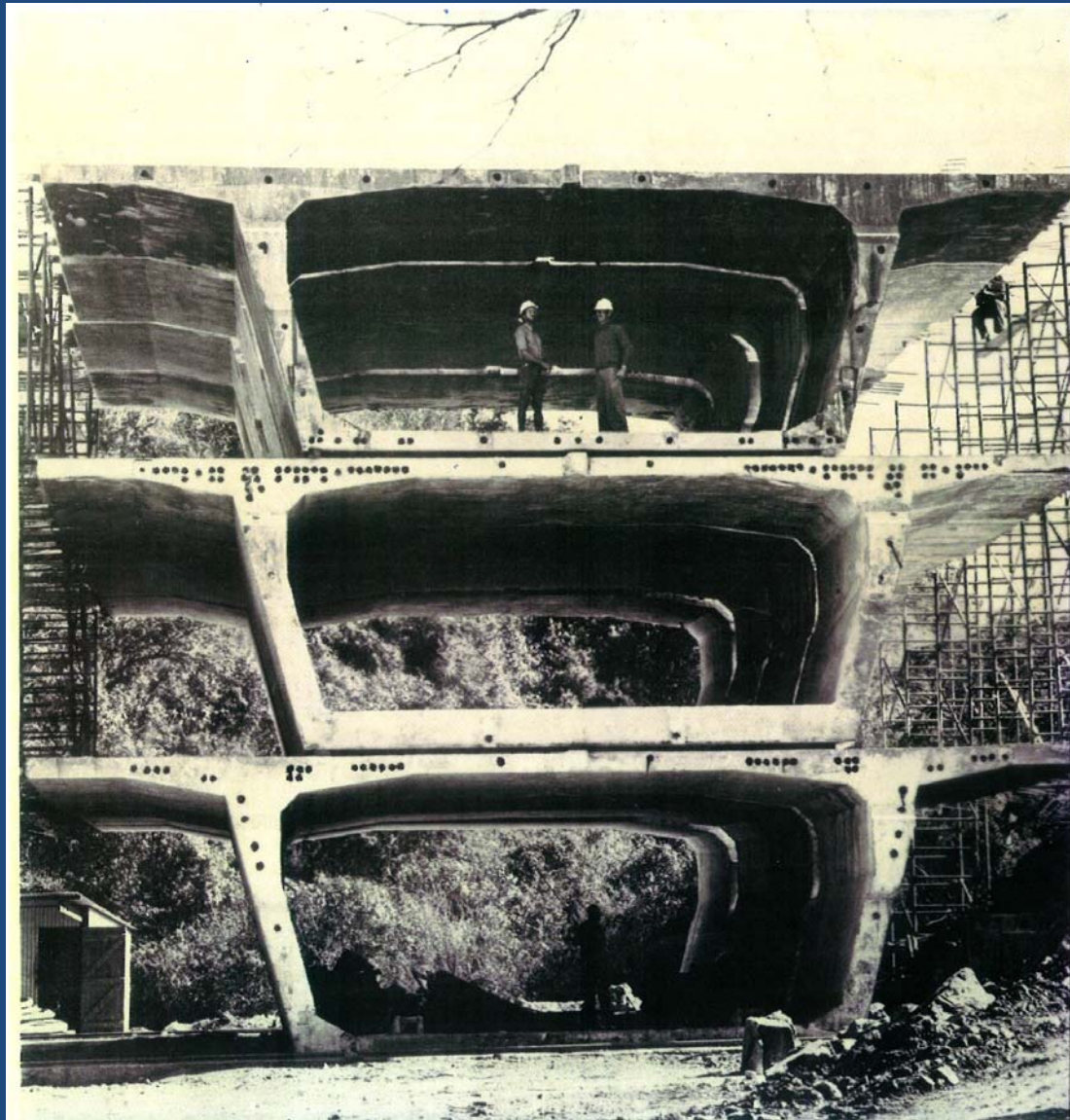
# East London 1975 Buffalo River Bridge

Kodeord :  
Præfabrikation 75 T units

02 oktober 2008

DFTU 25 år – Peter Lundhus

# East London 1975 Buffalo River Bridge



02 oktober 2008

DFTU 25 år – Peter Lundhus

# Forskuds begæring

## A N N E X U R E

### PARTICULARS OF CLAIM.

parties hereto are Bantu as defined in Act no. 38 of 1927 as amended.

plaintiff is the husband of one NONEMHLE to whom he is married under Bantu Law and Custom and which union still subsists.

During 1971 the defendant wrongfully committed adultery with Plaintiff's said wife and was caught in the act.

Defendant admitted liability and tendered payment of a certain red heifer calf plus an amount of R20.00 in cash. The defendant has not yet delivered the red heifer referred to above.

During 1972 the plaintiff once more caught the defendant in adultery with his said wife and on this occasion the defendant paid an amount of R5.00 in admission of his liability to the plaintiff but has failed to pay the balance.

Plaintiff prays for judgment against the defendant as follows:-

(a) For the delivery of the red heifer referred to above or payment of its value R80.00 plus payment of another beast or value R50.00.

(b) Payment of 3 head of cattle or their value R150.00 less the sum of R5.00 already paid.

(c) Further and alternative relief.

(d) Costs of suit.

Per: *R.S. Canoa*  
R.S. CANOA & A.N. MPONDO,  
Plaintiff's Attorneys,  
P.O. Box 109,  
IDUTYWA.

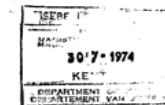
## A N N E X U R E PARTICULARS OF CLAIM.

1. The parties hereto are Bantu as defined in Act no. 38 of 1927 as amended.
2. The plaintiff is the husband of one NONEMHLE to whom he is married under Bantu Law and Custom and which union still subsists.
3. During 1971 the defendant wrongfully committed adultery with Plaintiff's said wife and was caught in the act.
4. The defendant admitted liability and tendered payment of a certain red heifer calf plus an amount of R20.00 in cash. The defendant has not yet delivered the red heifer referred to above.
5. During 1972 the plaintiff once more caught the defendant in adultery with his said wife and on this occasion the defendant paid an amount of R5.00 in admission of his liability to the plaintiff but has failed to pay the balance.

WHEREFORE plaintiff prays for judgment against the defendant as follows:-

- (a) For the delivery of the red heifer referred to above or payment of its value R80.00 plus payment of another beast or value R50.00.
- (b) Payment of 3 head of cattle or their value R150.00 less the sum of R5.00 already paid.
- (c) Further and alternative relief.
- (d) Costs of suit.

Per: *R.S. Canoa*  
R.S. CANOA & A.N. MPONDO,  
Plaintiff's Attorneys,  
P.O. Box 109,  
IDUTYWA.



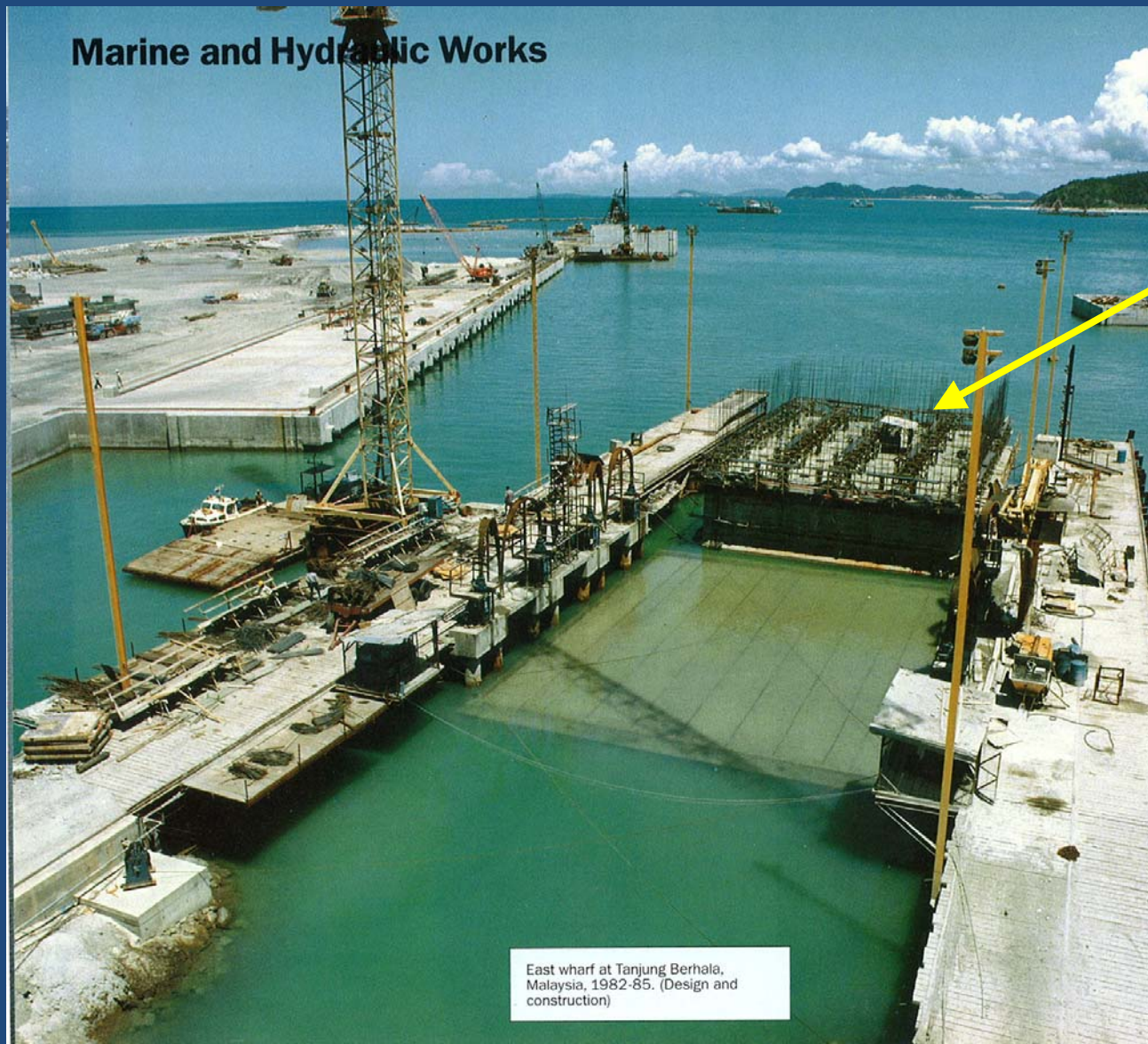
# Transport fra Europa til Østen



02 oktober 2008

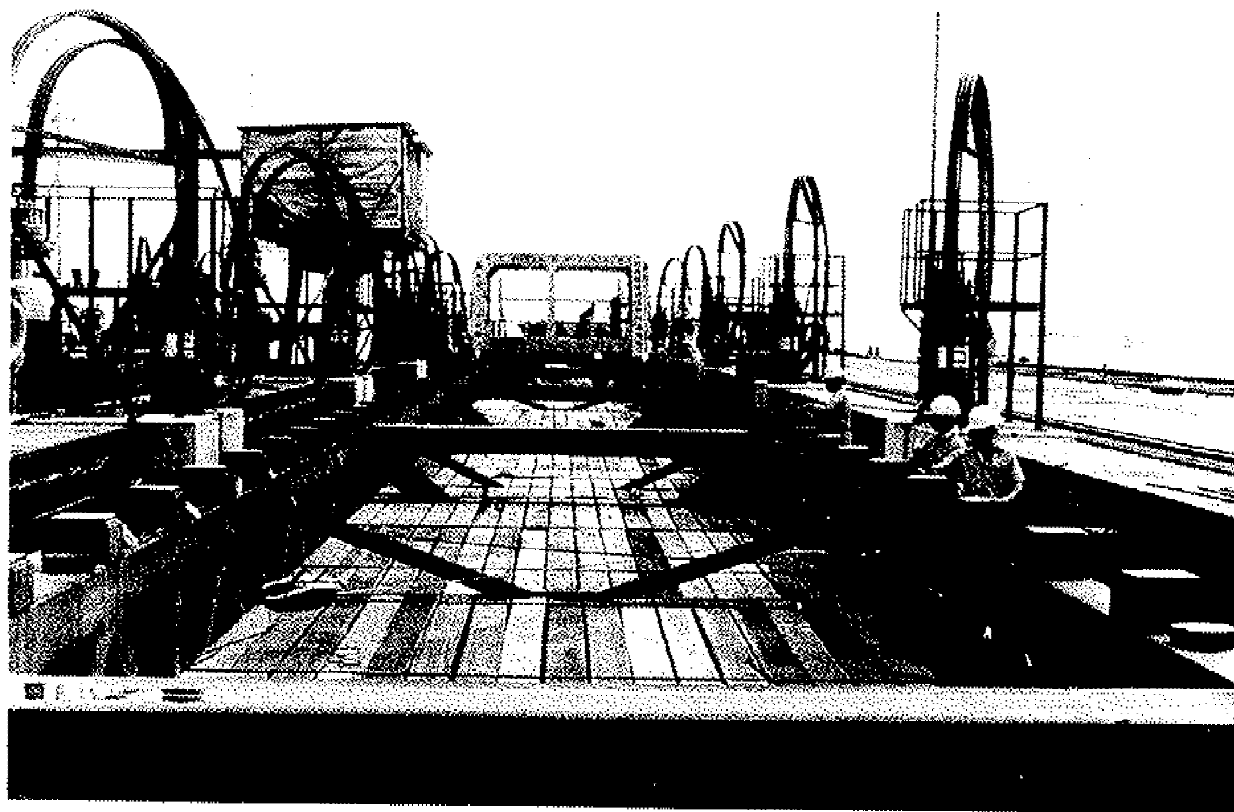
DFTU 25 år – Peter Lundhus

# 1984 Tanjung Berhala, Malaysia



Egen Marin Lift,  
- til caissoner

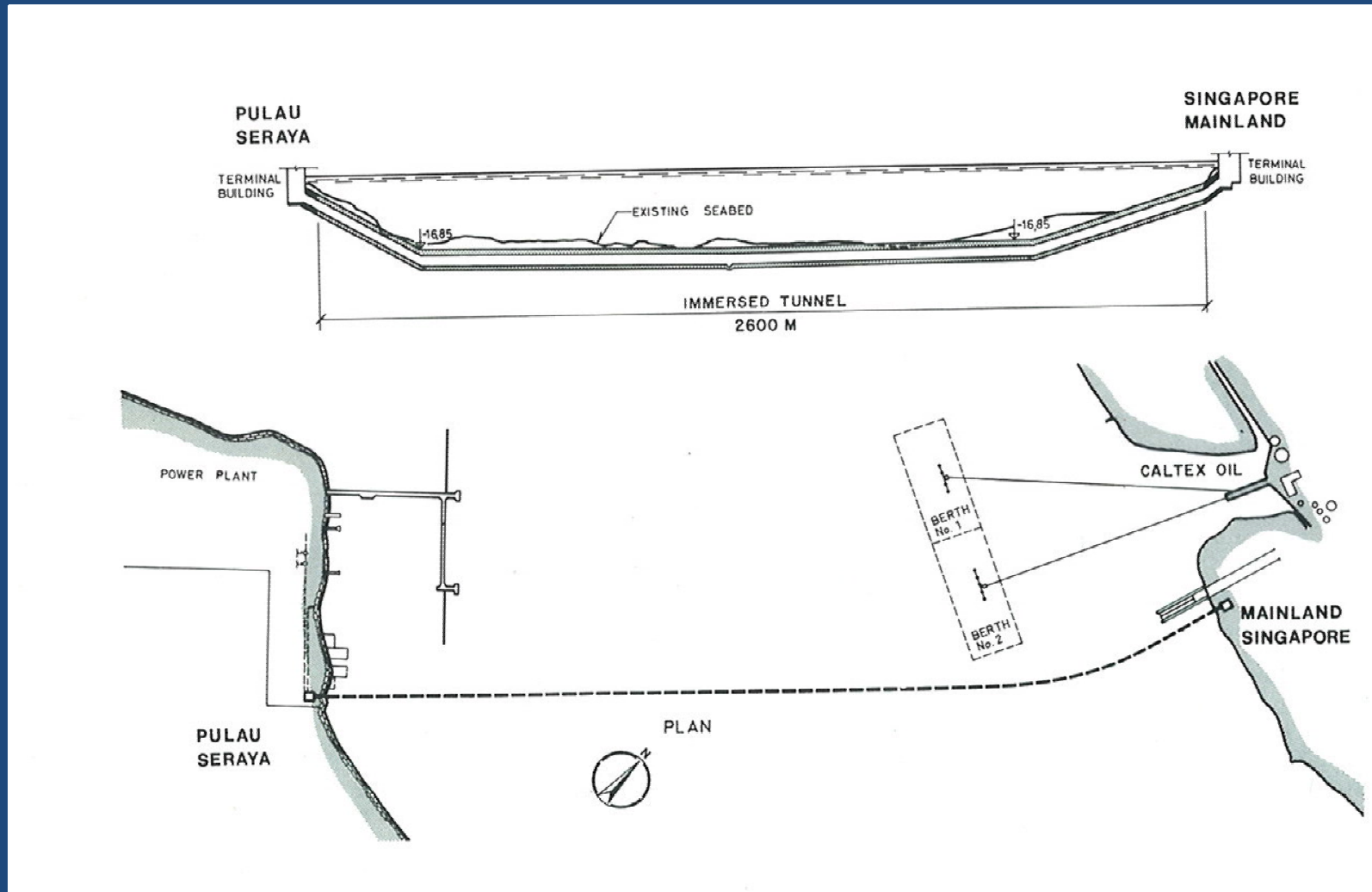
# 1985 Singapore – Endnu en egen Marin Lift .....Nu til TUNNELER



*One of the two marine lifts with the first tunnel segment positioned*

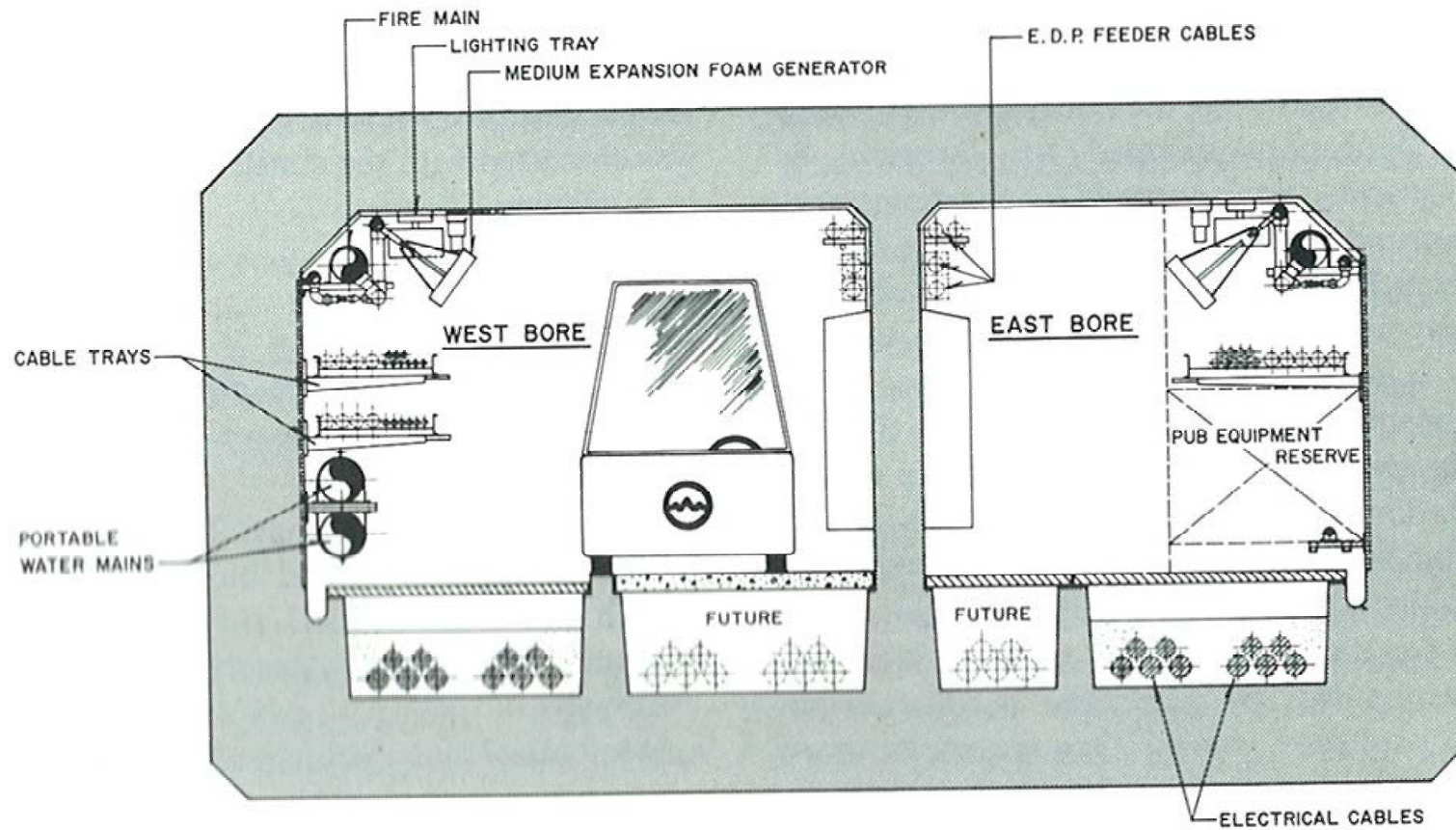


# Pulau Seraya - Layout

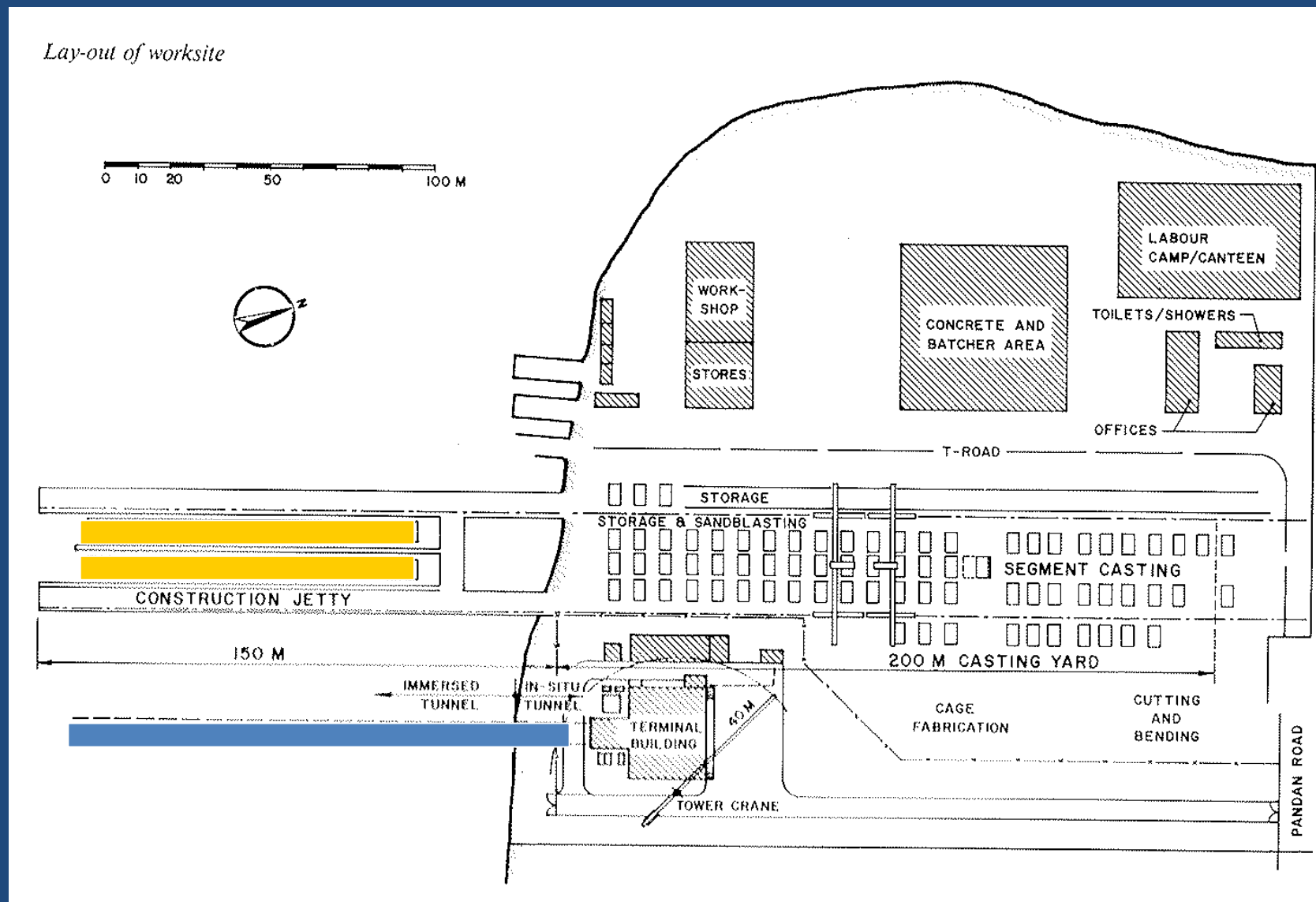


# Pulau Seraya - Tværsnit

*Cross section of tunnel showing service installations*

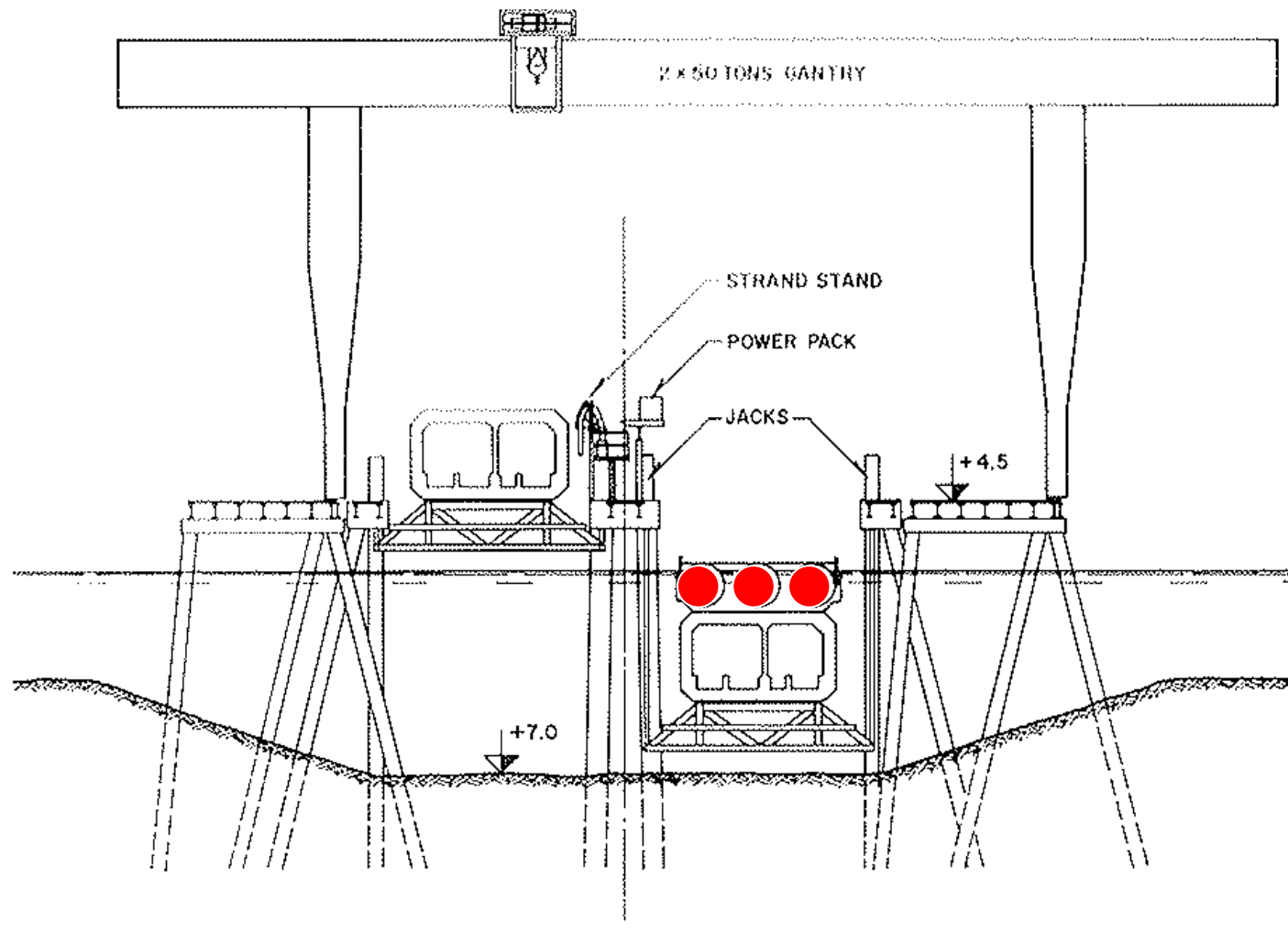


# Pulau Seraya – Layout af byggeplads



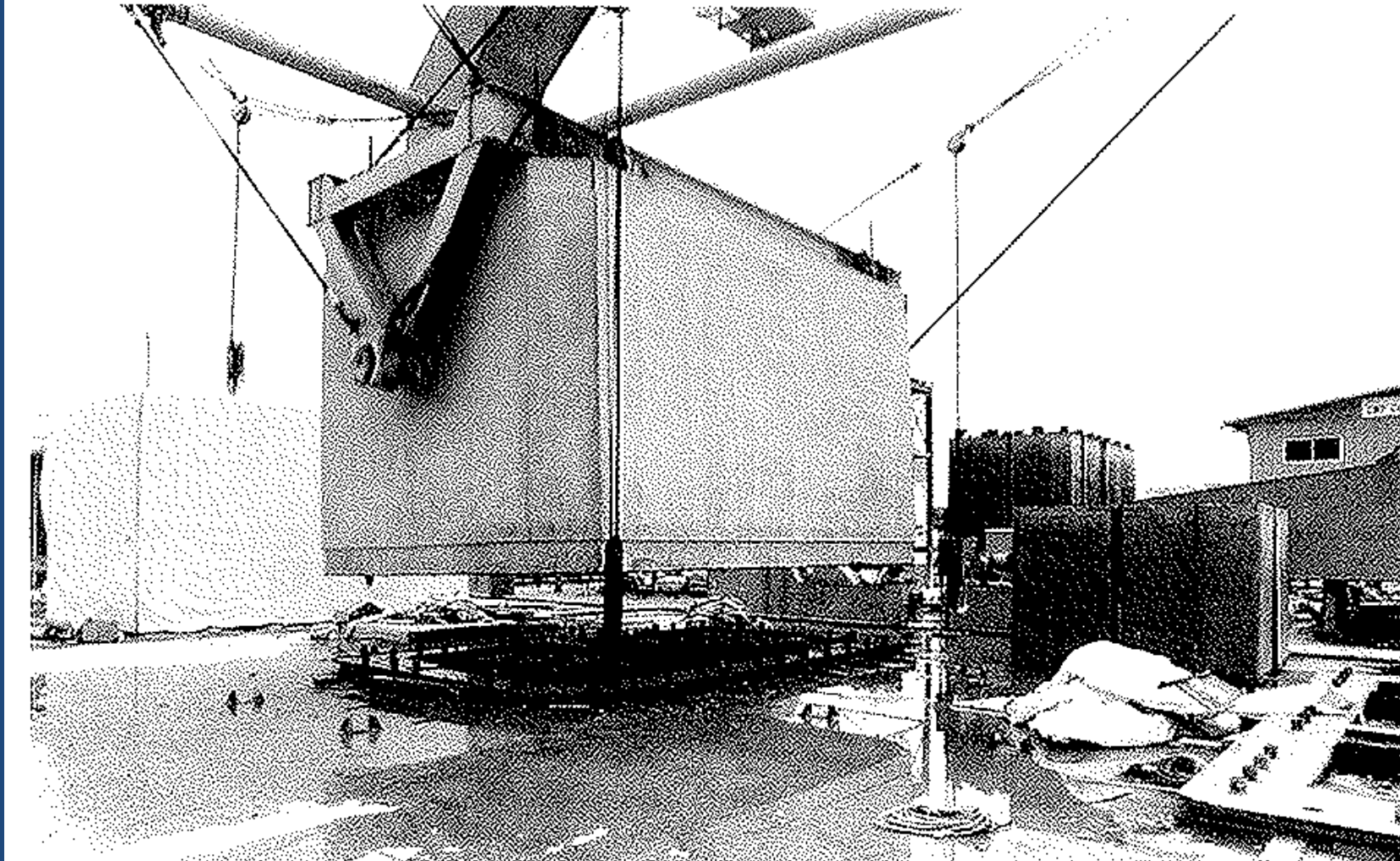
# Pulau Seraya – Princip for Marine Lift

*Cross section of marine lifts*



# Pulau Seraya – Tunnel segmenter støbt lodret

*Lifting of a standard segment (still in vertical position)*



02 oktober 2008

DFTU 25 år – Peter Lundhus

# Pulau Seraya – Marine Lift fra landsiden



02 oktober 2008

DFTU 25 år – Peter Lundhus

# Pulau Seraya – Marine Lift fra søsiden



02 oktober 2008

DFTU 25 år – Peter Lundhus

# Pulau Seraya – Marine chefen Nestor Rasmussen



02 oktober 2008

DFTU 25 år – Peter Lundhus



# Pulau Seraya – Sænke udstyret

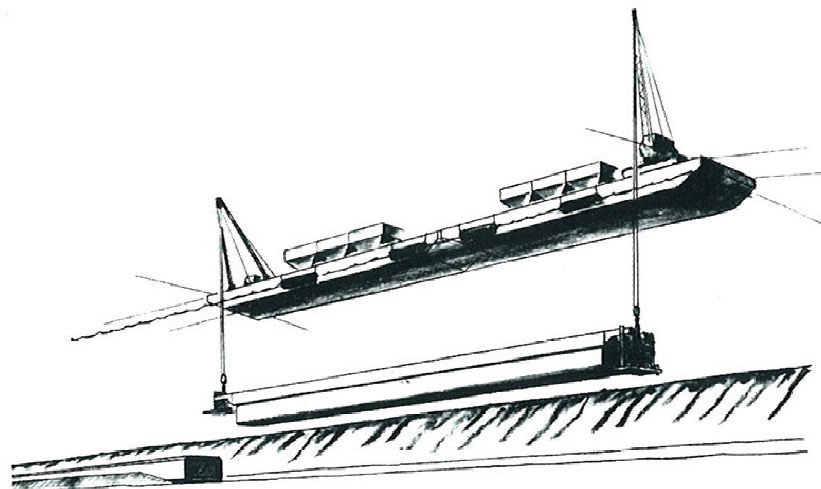


02 oktober 2008

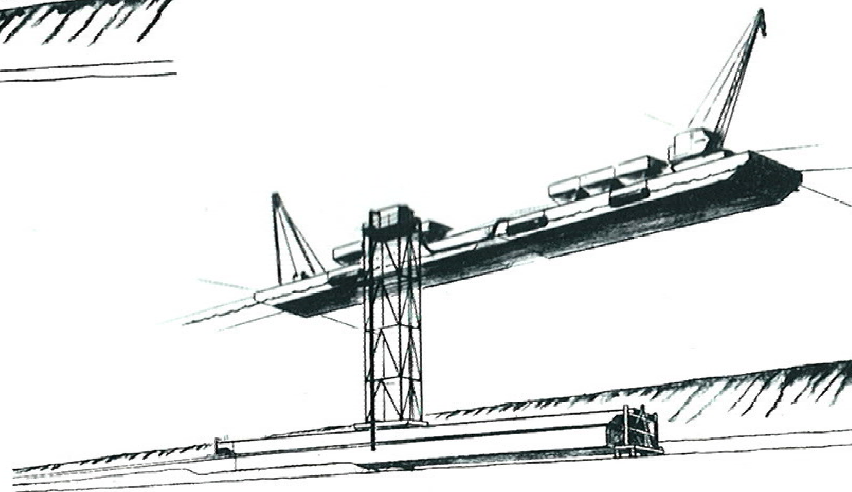
DFTU 25 år – Peter Lundhus

# Pulau Seraya – Sænketometode, illustreret af Nestor Rasmussen

Produktion: 100 m tunnel / uge  
Element udsejling : Tirsdag kl. 14.00



SINKING OF TUNNEL ELEMENTS



FOUNDING OF TUNNEL ELEMENTS

# Pulau Seraya – Kabelbakker og indbygget jernbane



02 oktober 2008

DFTU 25 år – Peter Lundhus

# Pulau Seraya - 1975 Singapore safety !!!!



02 oktober 2008

DFTU 25 år – Peter Lundhus

# 1977 Pulau Seraya - Lagkage ved break-through



02 oktober2008

DFTU 25 år - Peter Lundhus

# Storebælt 1942



02 oktober 2008

DFTU 25 år – Peter Lundhus

# 1998 Storebælt

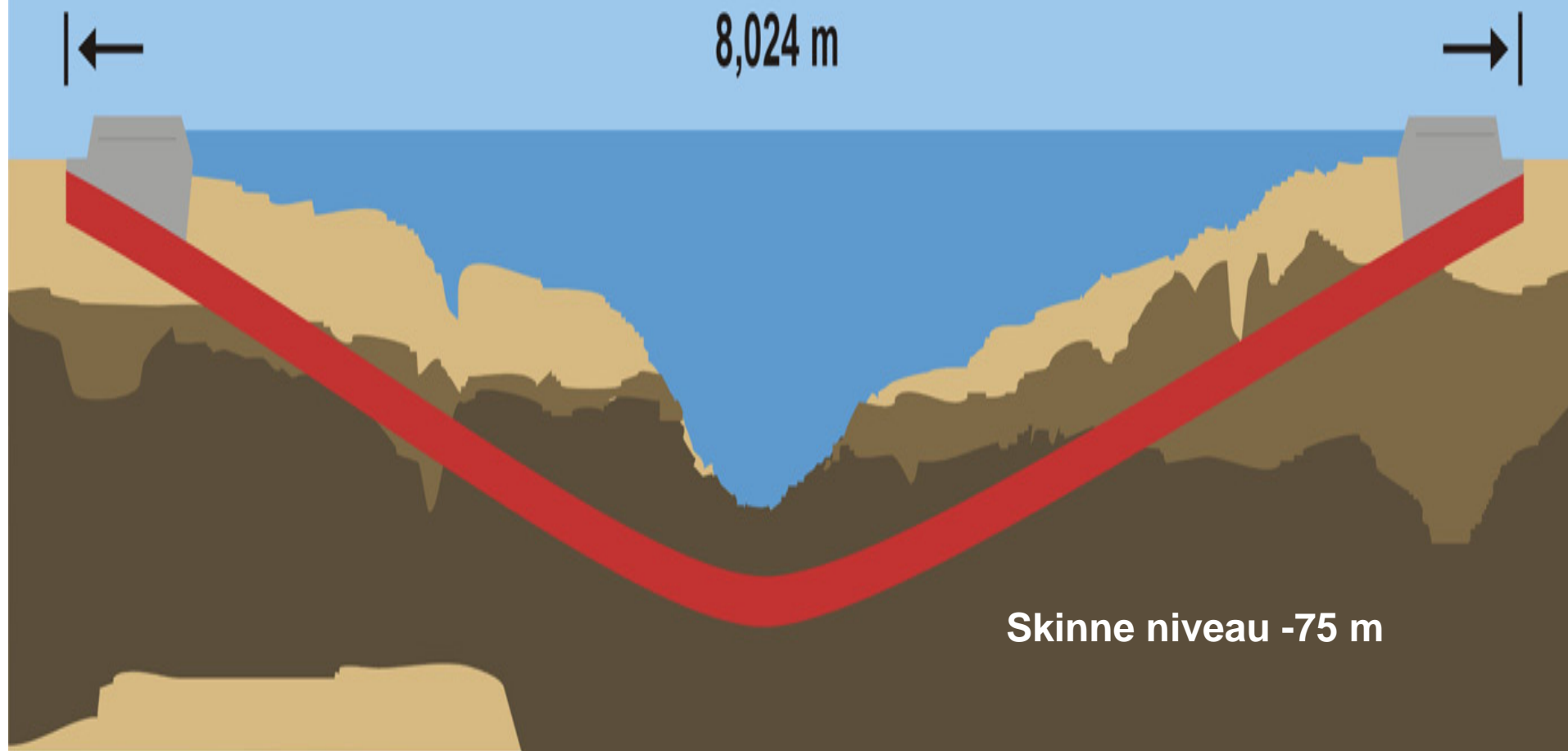
## Den borede tunnel – 2 jernbane rør



02 oktober 2008

DFTU 25 år – Peter Lundhus

# East Tunnel. 8,024 m



02 oktober 2008

DFTU 25 år – Peter Lundhus



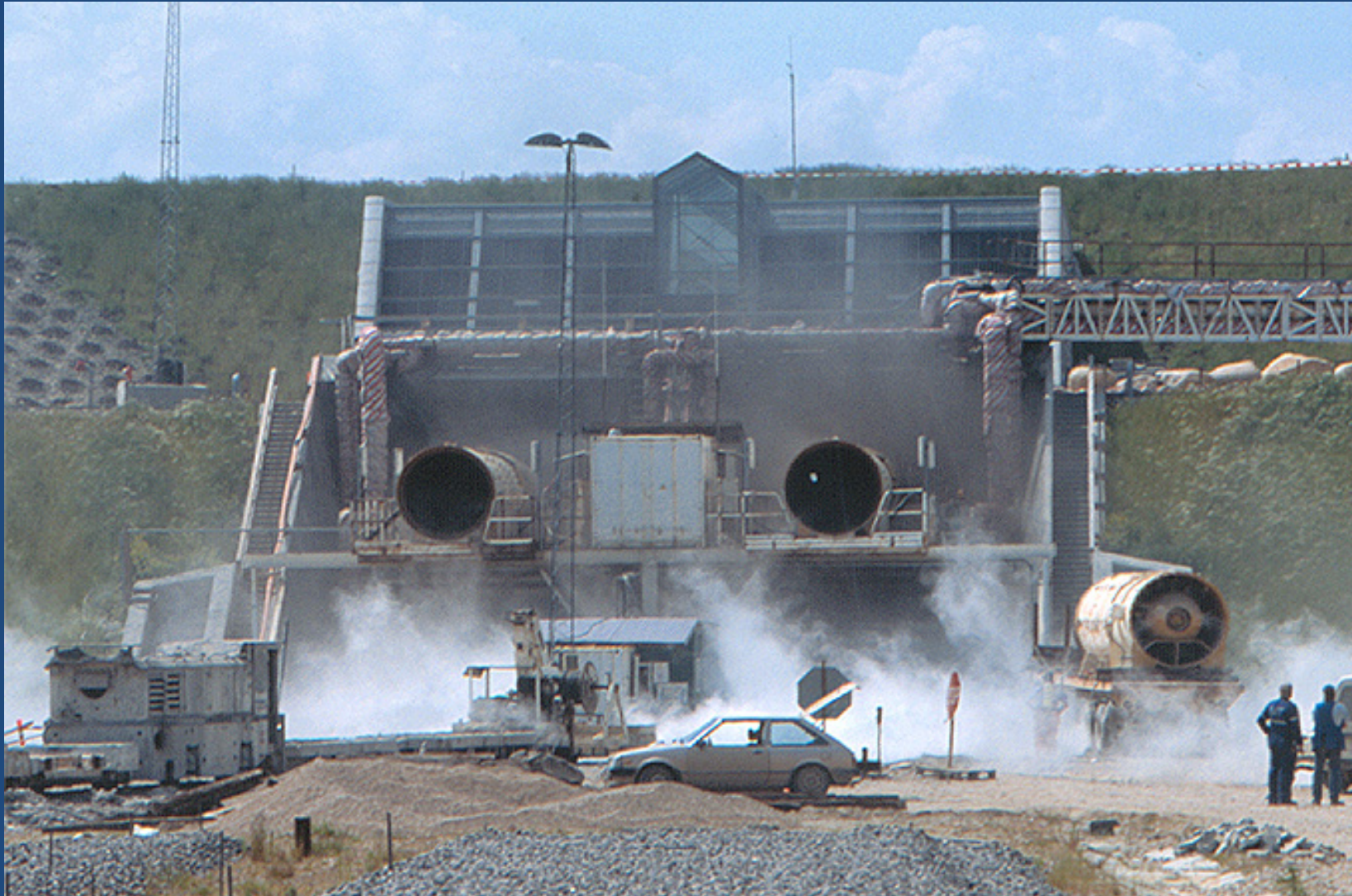
# East Tunnel - Vandskade i oktober 1991



02 oktober 2008

DFTU 25 år – Peter Lundhus

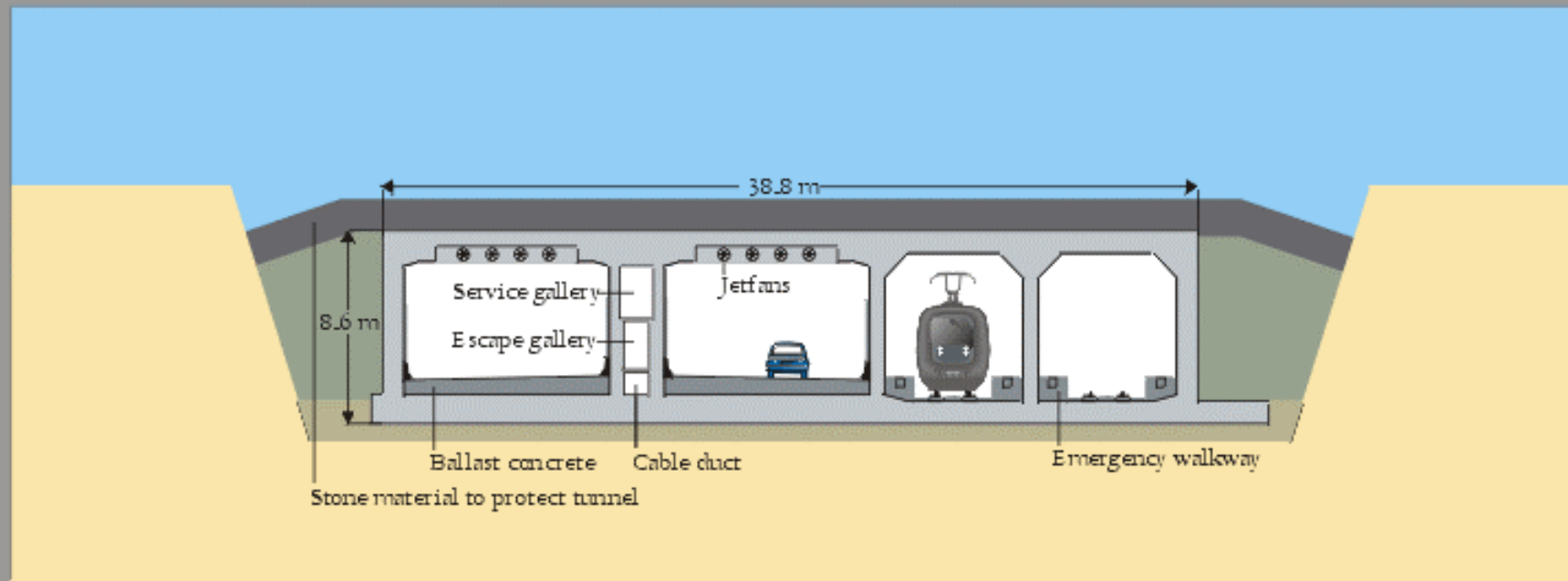
# East Tunnel – Brandskade i juni 1994



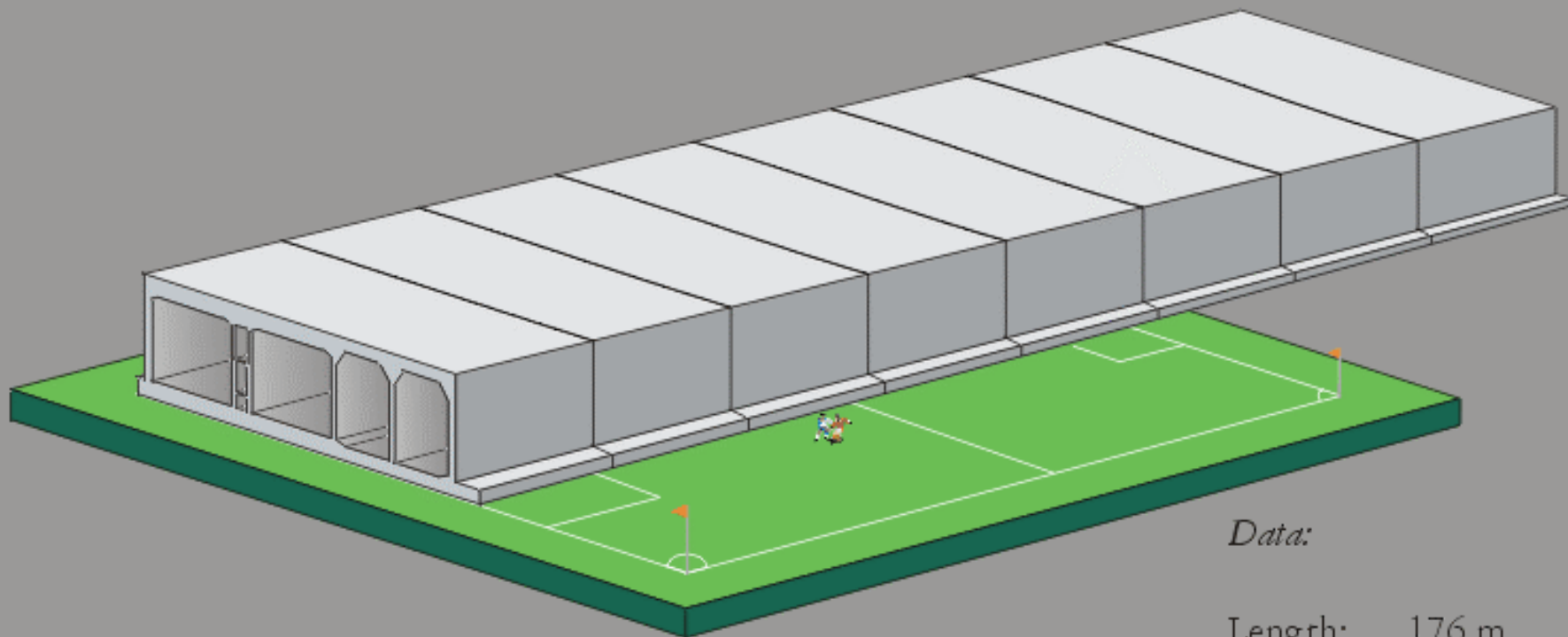
02 oktober 2008

DFTU 25 år – Peter Lundhus

# 1995 Drogden tunnelen



# Tunnel element



## Data:

Length: 176 m.

Weight: 55.000 t.

Width: 38.8 m.

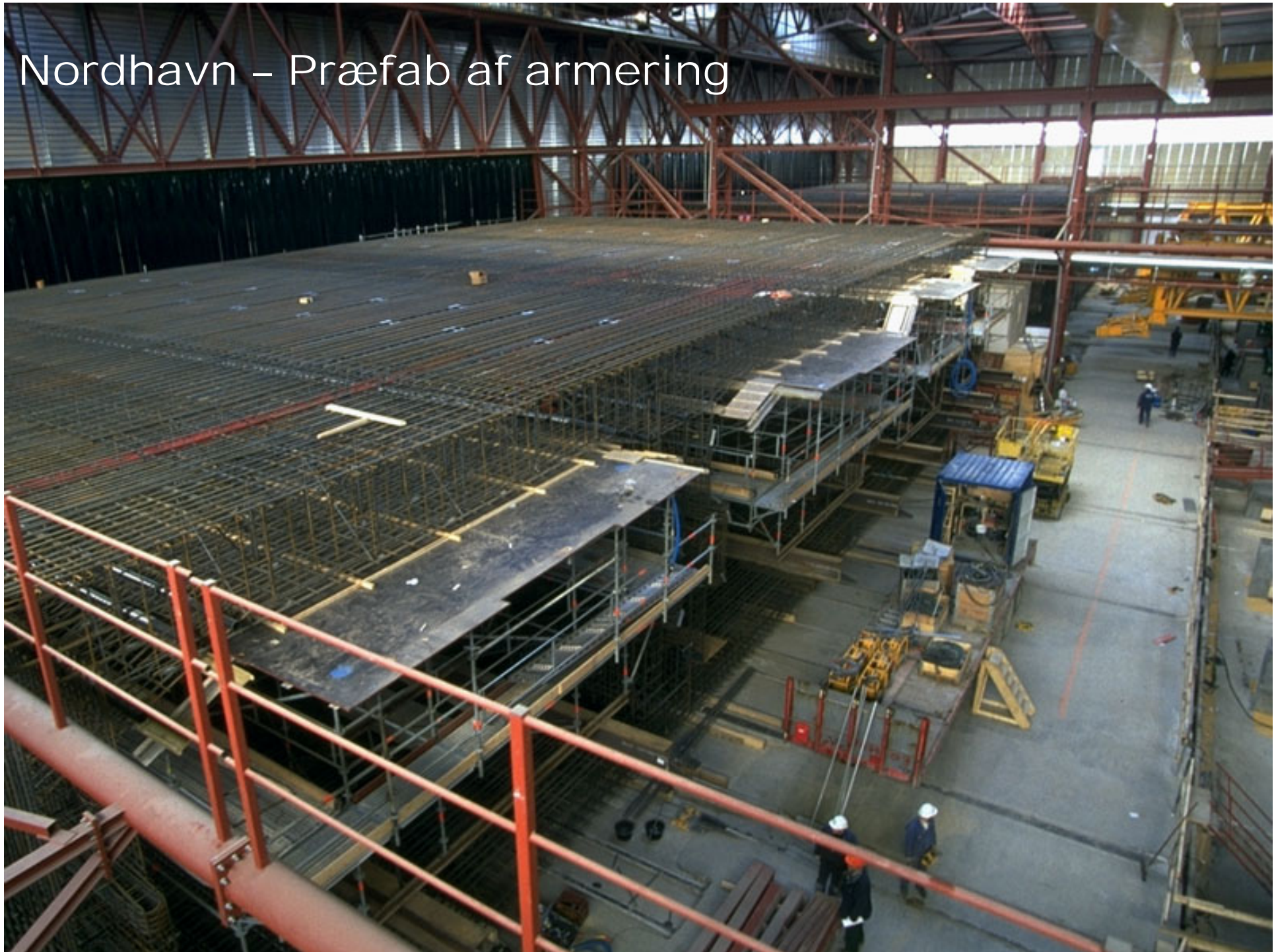
Height: 8.6 m.

Volume: 58.000 m<sup>3</sup>



Drogden tunnel – Nordhavn fabikationsanlæg

# Nordhavn – Præfab af armering



# Nordhavn - Søsætning af tunnelelement



02 oktober 2008

DFTU 25 år - Peter Lundhus

# Nordhavn - 1997 Julekort mulighed







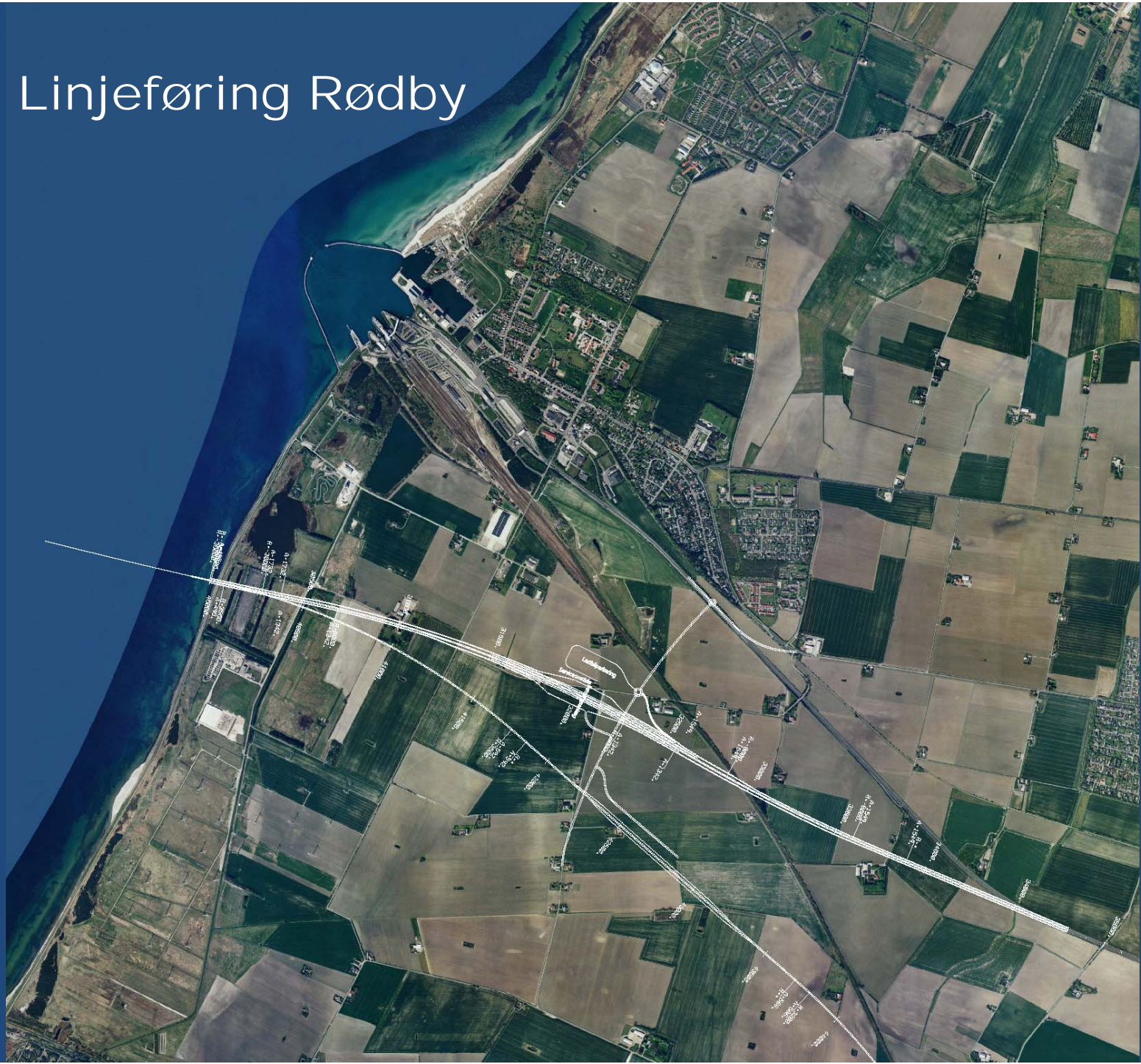
# Femern Bælt – 20 km fast forbindelse Bane og motorvej



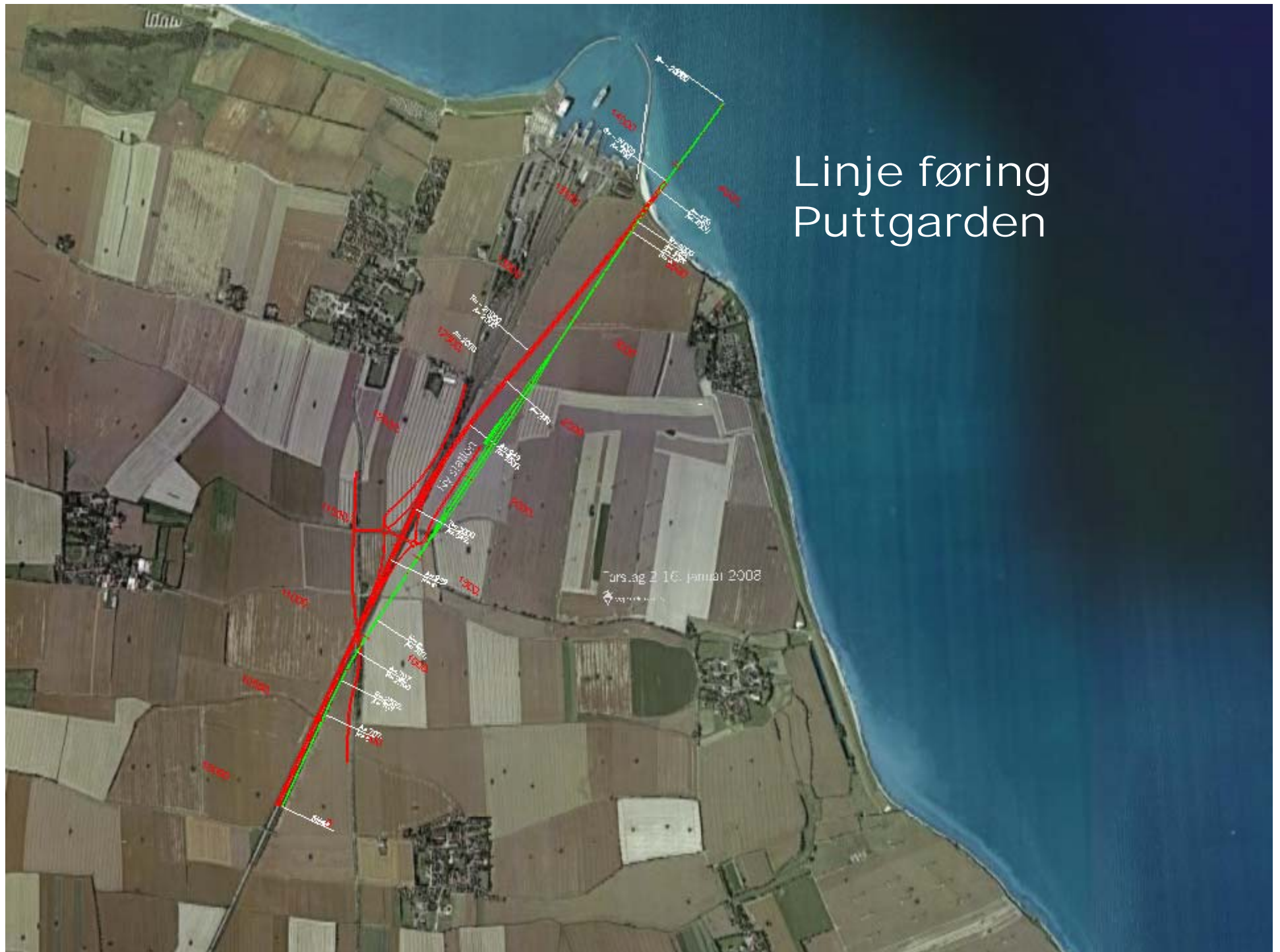
02 oktober 2008

DFTU 25 år – Peter Lundhus

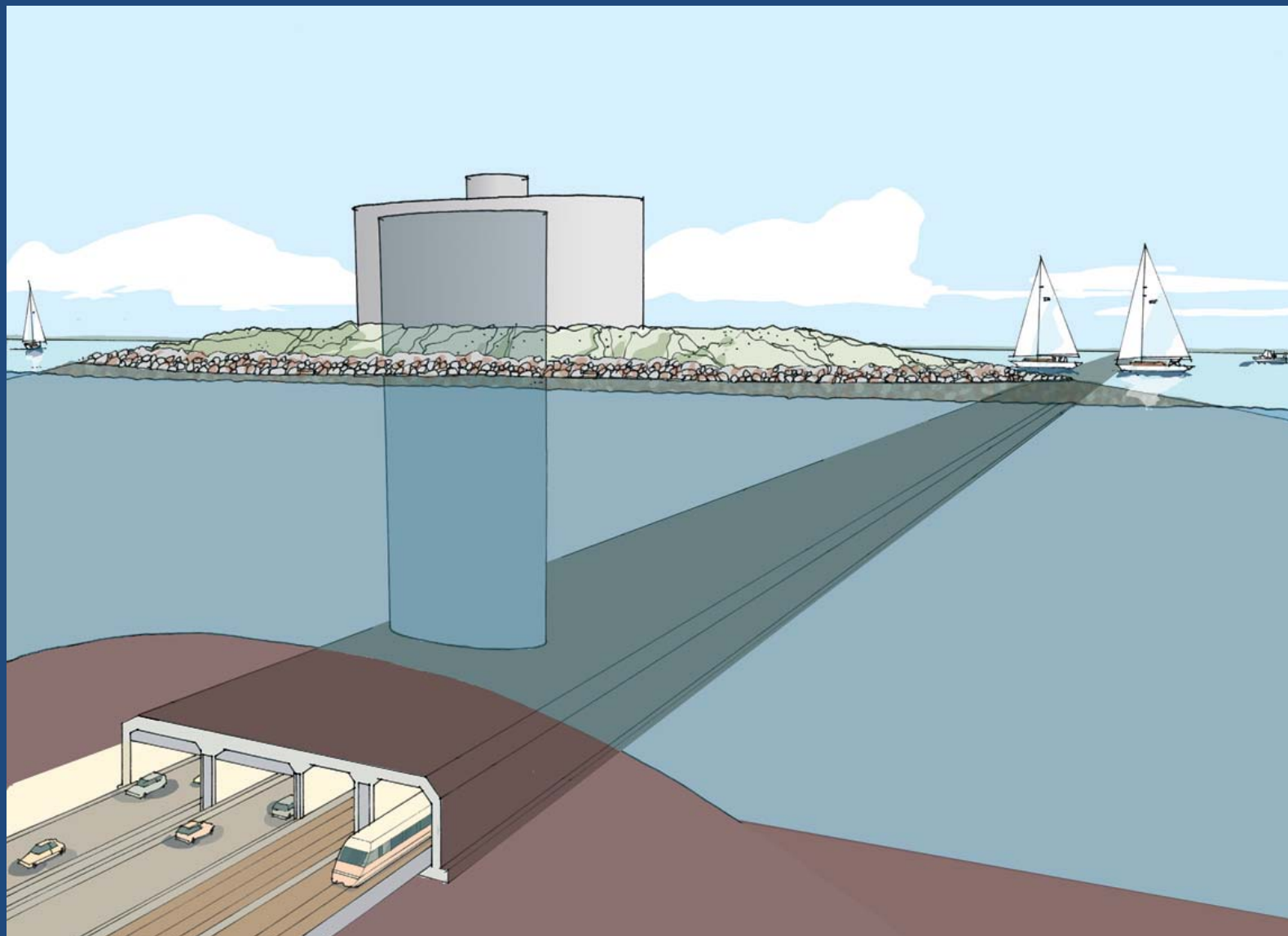
# Linjeføring Rødby



# Linje føring Puttgarden



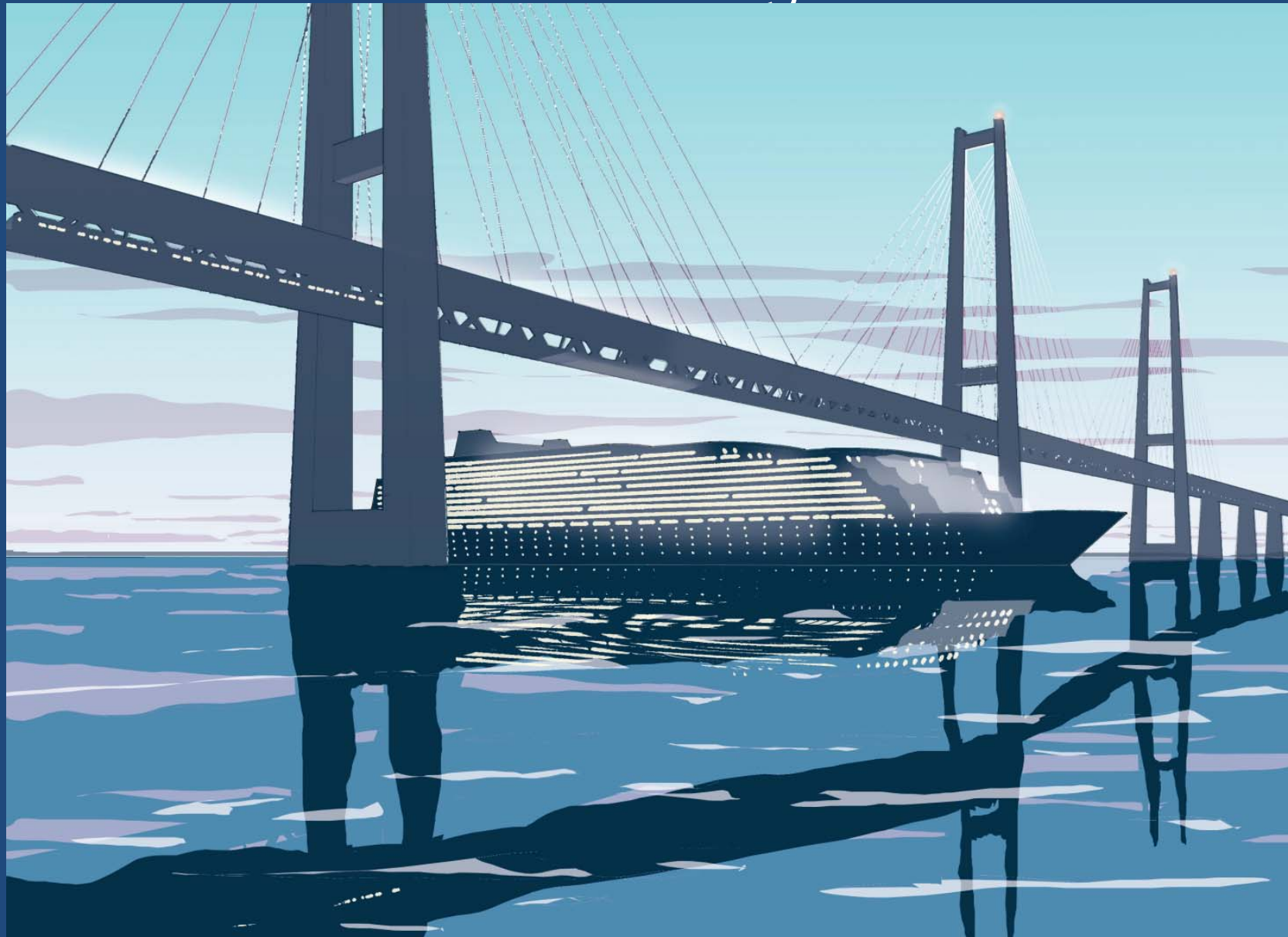
# Femern – 20 km sænketunnel



02 oktober 2008

DFTU 25 år – Peter Lundhus

# Femern – 20 km skråstagsbro



02 oktober 2008

DFTU 25 år – Peter Lundhus

# Fremtiden

- Er usikker

MEN

Vil kræve en Kbhvn. havnetunnel

- Vil kræve en bornholmertunnel
- Og mange andre udfordringer....

TAK for opmærksomheden