

SIMIEN ORKUREIKNINGAR FYRIR BREEAM VERKEFNI

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Tæknisvið
VSÓ Ráðgjöf

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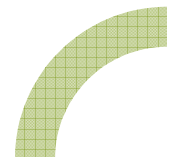
DAGSKRÁ

Dalskóli

BREEAM Ene 01 krafa

Vinnuferill

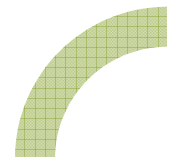
Ályktun

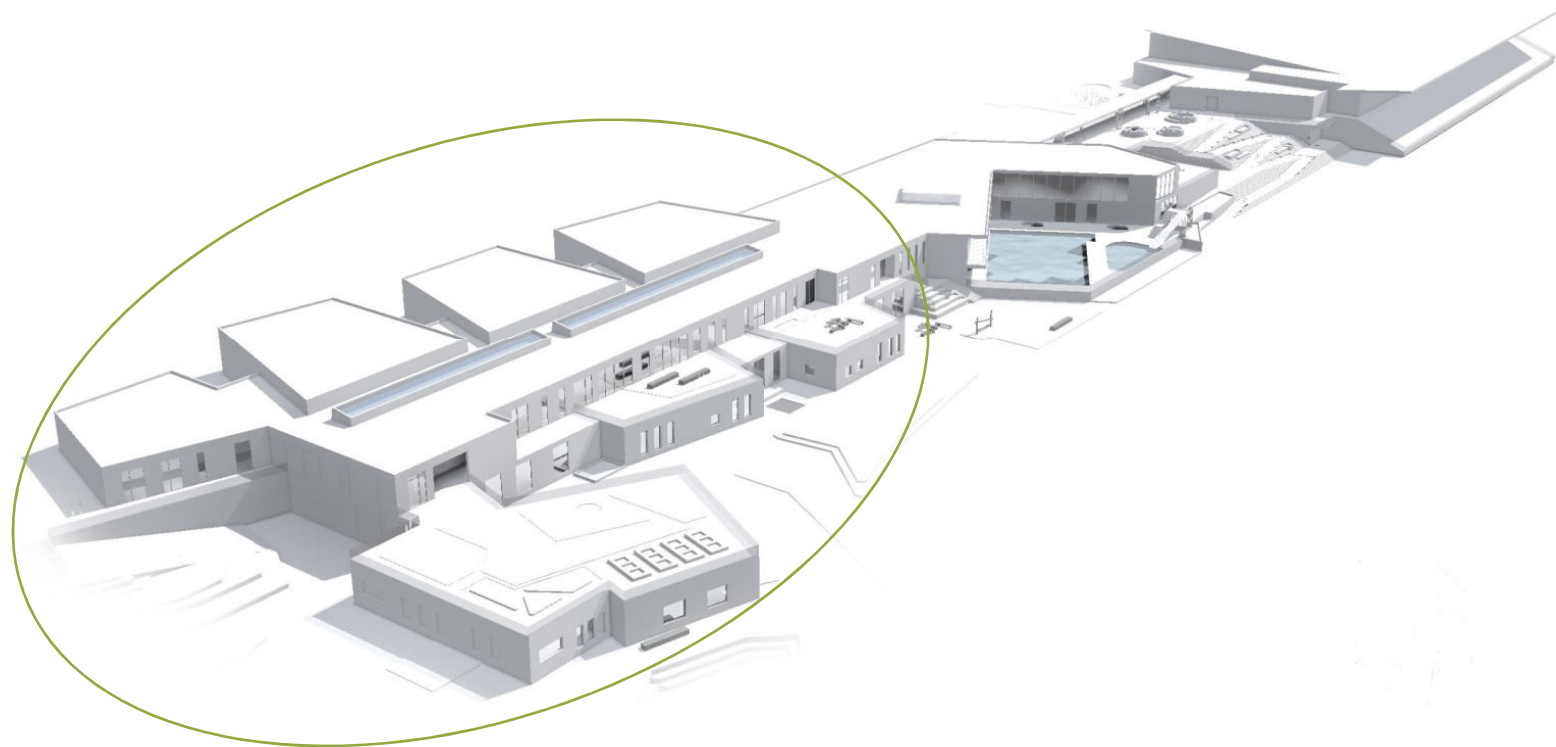


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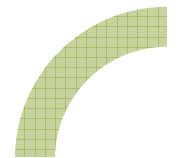


DALSKÓLAVERKEFNI





LEIKSKÓLI OG GRUNNSKÓLI

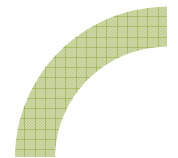


VSÓ RÁÐGJÖF

BREEAM®



BREEAM VISTVOTTUNARKERFI



BREEAM ENE 01

- Orkusparandi hönnun
- Bæting í orkunýtingu
- Draga úr CO2 losun
- Byggingarhermun
- Orkuútreikningar

Ene 01 Energy efficiency

(all buildings)

Number of credits available	Minimum standards
15	Yes

Aim

To recognise and encourage buildings that minimise their operational energy consumption through good design.

Assessment criteria

The following is required to demonstrate compliance for:

Up to 15 credits

Option 1 - Use of Approved Building Energy Calculation Software

- The energy performance of the building is calculated from design information using approved energy calculation (modelling) software and the number of credits achieved is based on the predicted energy performance of the assessed building compared to the performance of an equivalent Notional building (see CN6) designed to meet, but not improve on, the current building energy performance standard.
- The Energy Performance Ratio for International New Constructions (EPRINC) is calculated using BREEAM's Ene 01 calculator, which takes account of the following parameters:
 - The building's operational energy demand
 - The building's primary energy consumption
 - The total resulting CO₂ emissions
- The calculation is determined using the following data on the building's specified/ designed Service energy and fabric performance modelled using approved building energy calculation software:
 - Building floor area (m²)
 - Notional building energy demand (MJ/m²)
 - Actual building energy demand (MJ/m²)
 - Notional building primary energy consumption (kWh/m²)
 - Actual building Primary energy consumption (kWh/m²)
 - Notional building emission rate (kgCO₂/m²)
 - Actual building emission rate (kgCO₂/m²)
- Modelling is carried out by a suitably qualified energy modelling engineer and/or accredited expert who is responsible for verifying that the data entered in the energy model is appropriate.
- Compare the relevant EPR_{INC} achieved with Table - 21 of benchmarks below and award the corresponding number of BREEAM credits.

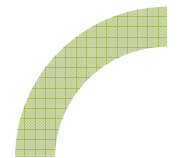
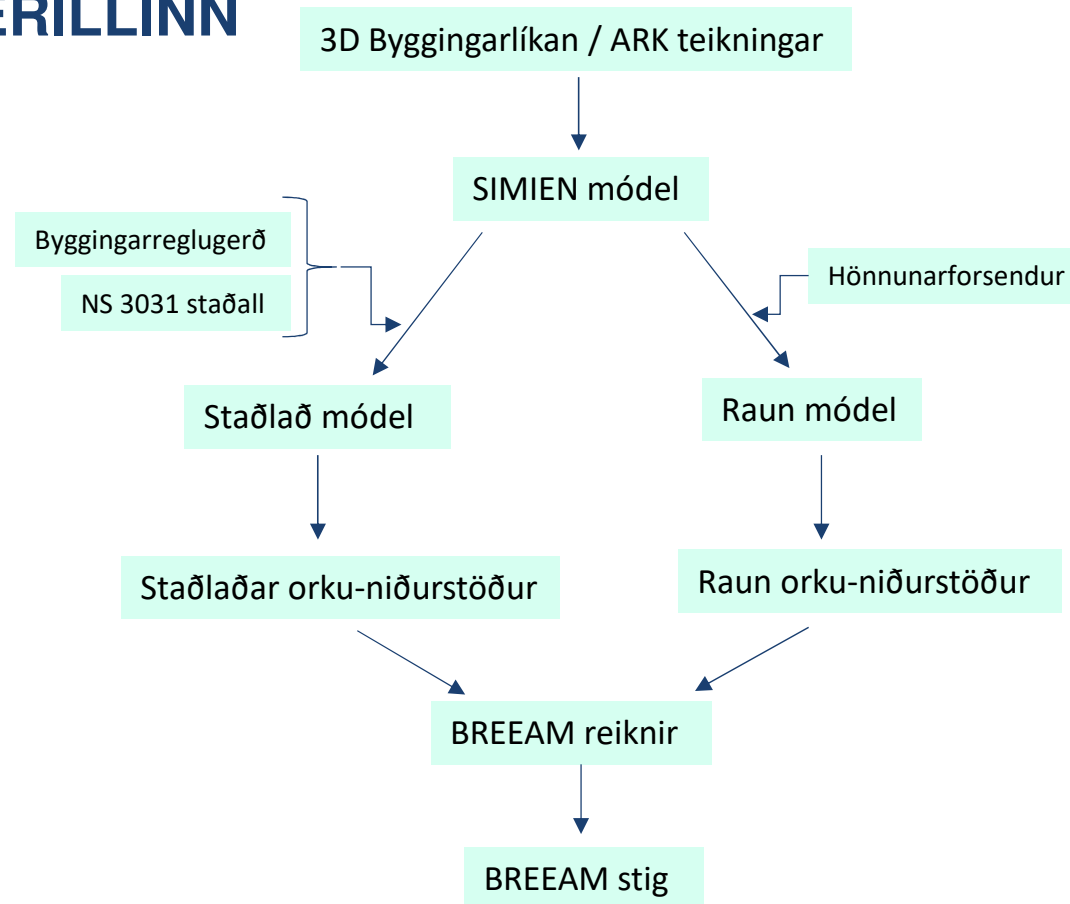
BREEAM International New Construction Technical Manual

SD5075 - 1.1:2013
Issue date: 20/06/2016



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VINNUFERILLINN

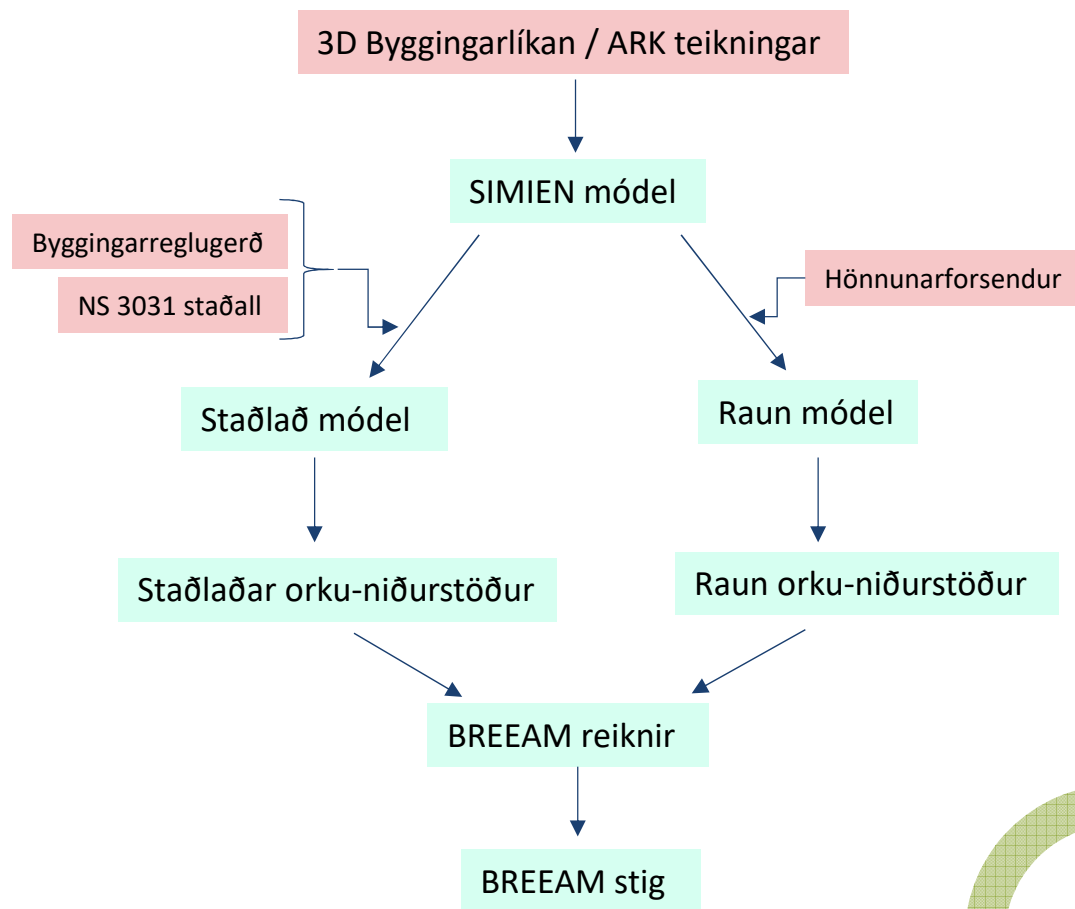




FORSENDUR

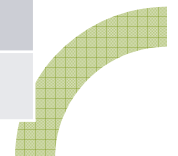
Veðurgögn	Innbyggð veðurgögn fyrir Reykjavík (útilofthitastig yfir heilt ár á klukkutímabreytingum, veðurgögnin innihalda ekki sólarálag)
Orkugjafi	CO2 útblástur, nýtnistala og hlutfall orkugjafa.
Byggingarhlutar	Stærðir (flatarmál, ummál, rúmmál og lengd), loftskipti, eðlisvarmarýmd, notkunartími, kuldabré, snúningsátt, skermingarstuðull, jarðefni.
Tækni kerfi	Loftmagn, innblásturshitastig, rekstrartími, hita- og kæliafl, SFP gildi, hitanýtni, varmaendurvinnsla, aflþörf og varmaálag frá lýsingu, tækjum og fólki, upphitun á neysluvatni, upphitunarafli hitakerfa.

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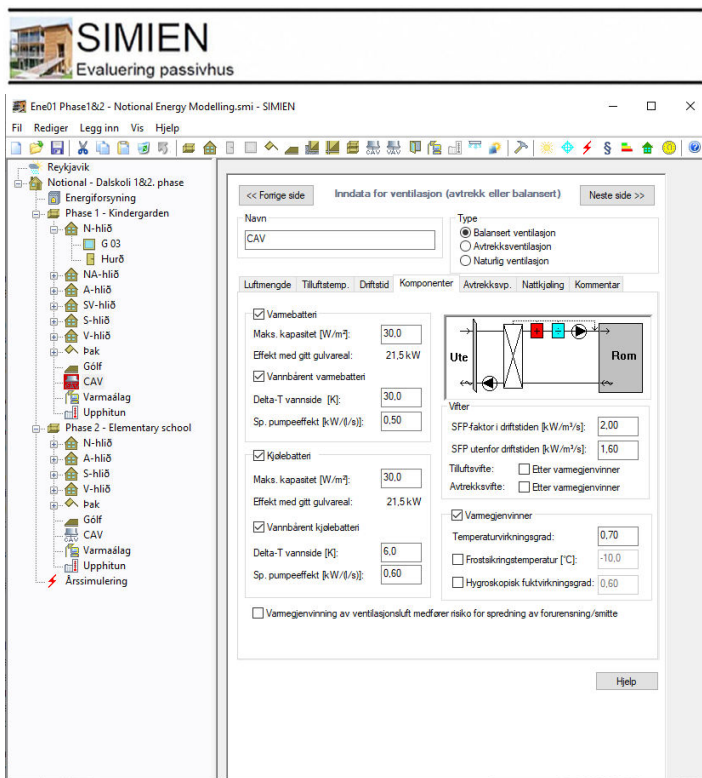


SAMANBURÐUR

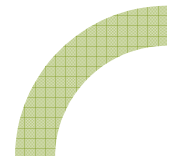
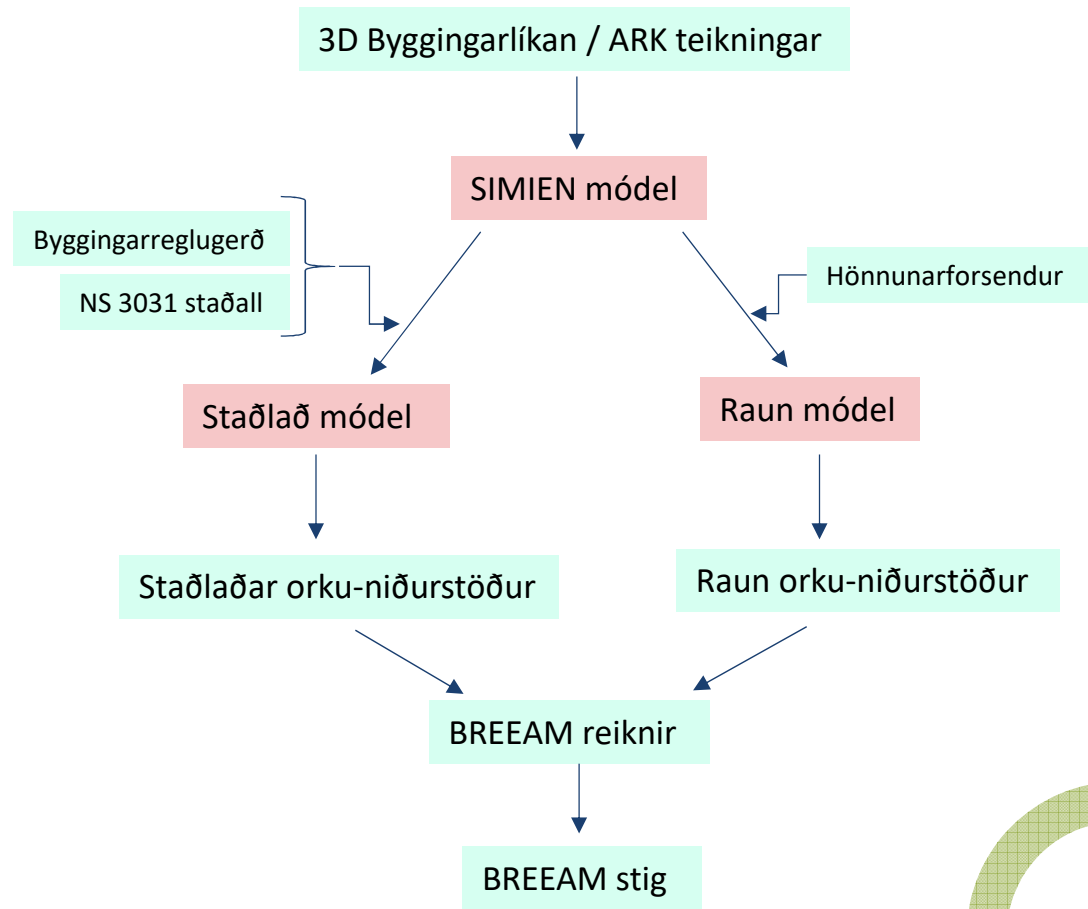
Eiginleikar byggingarluta:	Staðlað	Raun
U-gildi veggja	0,40 [W/m ² K]	0,30 [W/m ² K]
U-gildi glugga	2,0 [W/m ² K]	1,7 [W/m ² K]
U-gildi þaks	0,20 [W/m ² K]	0,18 [W/m ² K]
U-gildi gólfs	0,30 [W/m ² K]	0,20 [W/m ² K]
Stöðluð kuldabré	0,12 [W/m ² K]	0,06 [W/m ² K]
Loftskipti	1,47 [1/h]	0,84 [1/h]
Eiginleikar loftræsikerfis:		
Heildarloftmagn rekstartími/utan rekstartíma	4,56/2,0	2,85/2,0
Varmaendurvinnsla	70	84
SFP	2,0	1,31

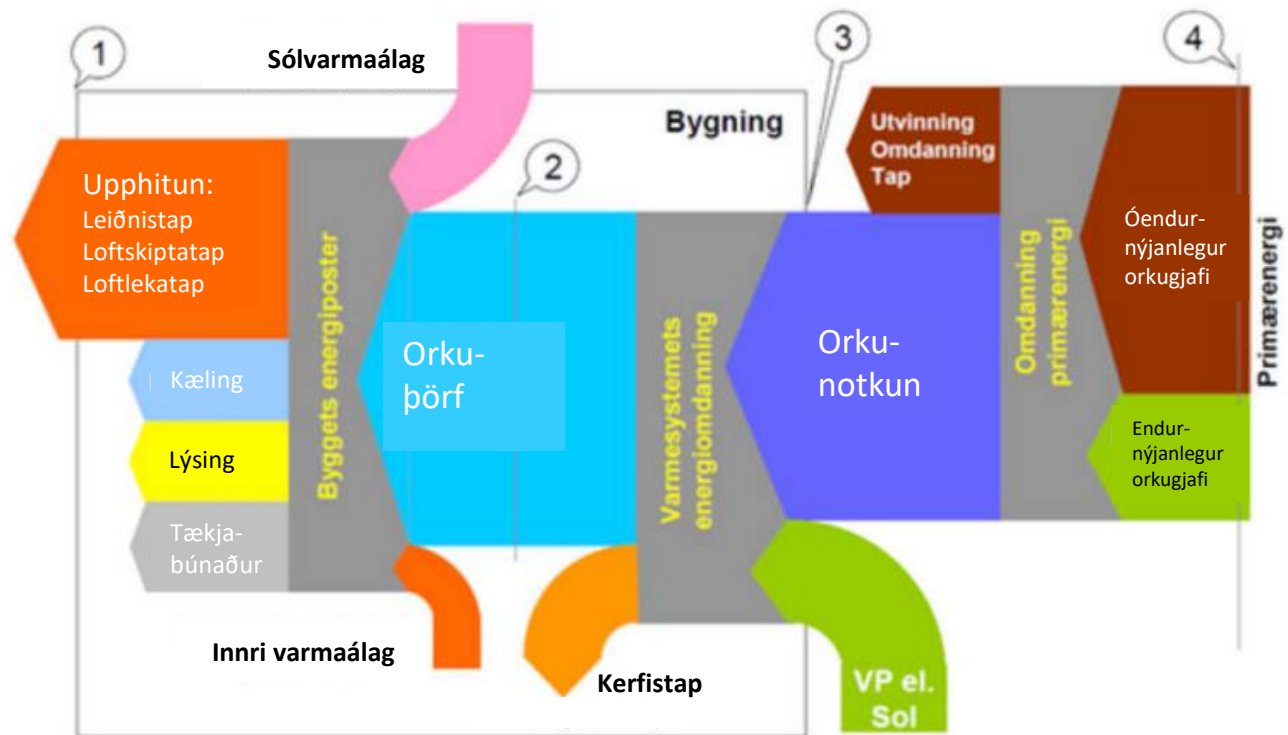


SIMIEN BYGGINGARHERMUN

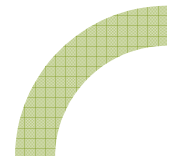


VSÓ RÁÐGJÖF





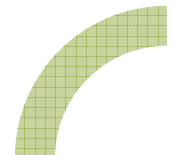
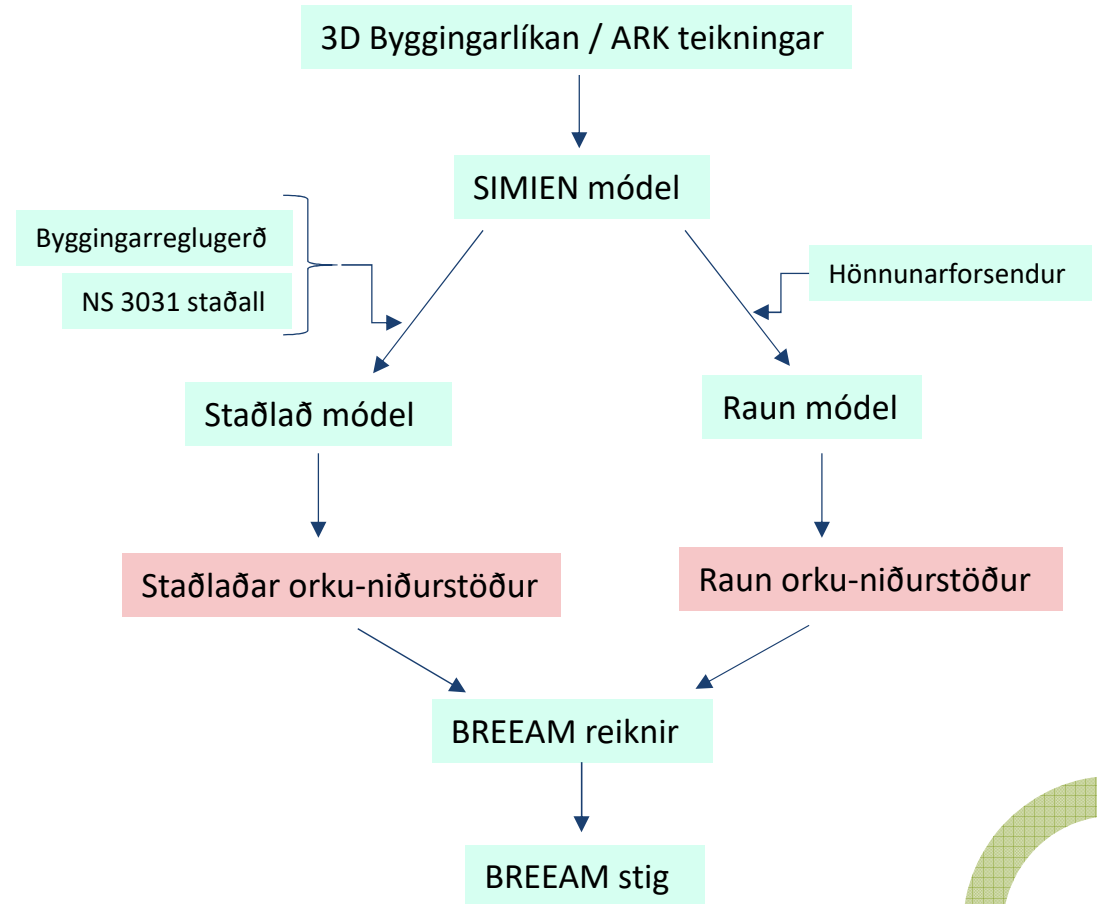
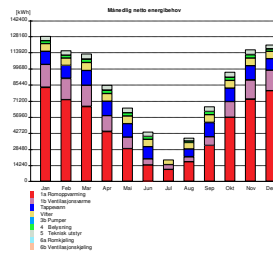
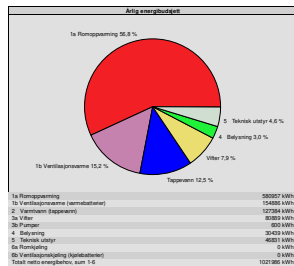
ORKUBÚSKAPUR BYGGINGA



NIÐURSTÖÐUR

Energibudsjett		
Energipost	Energiebehov	Spesifikt energiebehov
1a Romoppvarming	580957 kWh	81,9 kWh/m ²
1b Ventilasjonvarme (varmebatterier)	154886 kWh	21,8 kWh/m ²
2 Varmtann (tappevann)	127384 kWh	18,0 kWh/m ²
3a Vifter	80889 kWh	11,4 kWh/m ²
3b Pumper	600 kWh	0,1 kWh/m ²
4 Belysning	30439 kWh	4,3 kWh/m ²
5 Teknisk utstyr	46831 kWh	6,6 kWh/m ²
6a Romkjøling	0 kWh	0,0 kWh/m ²
6b Ventilasjonkjøling (kjølebatterier)	0 kWh	0,0 kWh/m ²
Totalt netto energiebehov, sum 1-6	1021986 kWh	144,0 kWh/m²

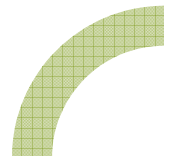
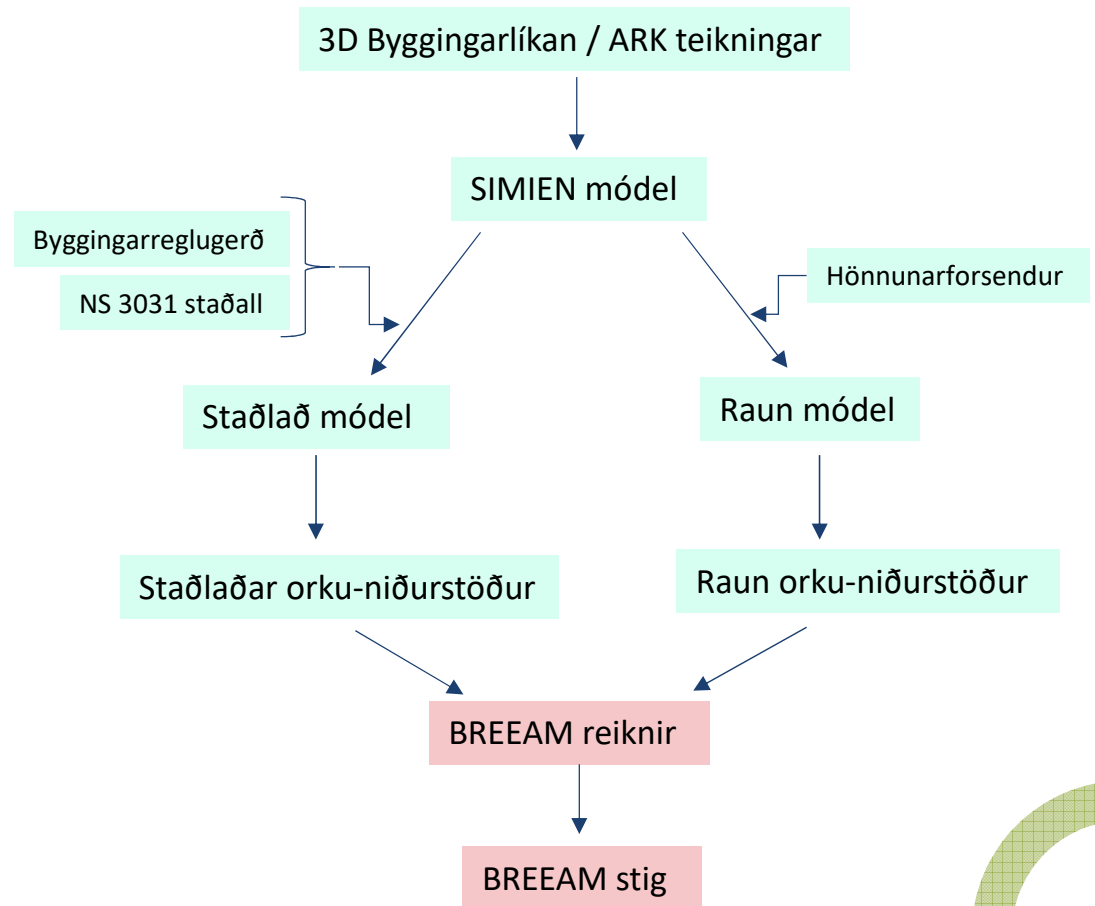
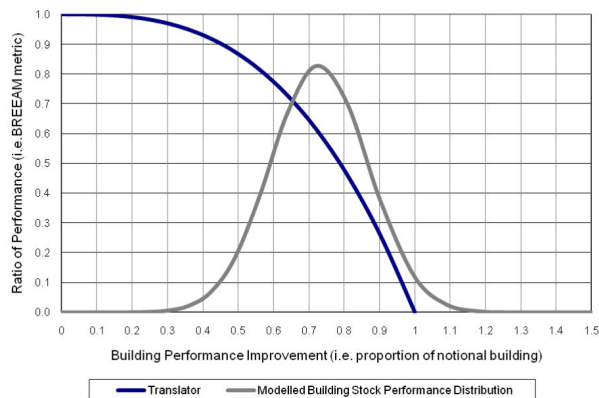
Árlege utslipp av CO2		
Energivare	Utslipp	Spesifikt utslipp
1a Direkte el.	3969 kg	0,6 kg/m ²
1b El. til varmepumpesystem	0 kg	0,0 kg/m ²
1c El. til solfangersystem	0 kg	0,0 kg/m ²
2 Olje	0 kg	0,0 kg/m ²
3 Gass	0 kg	0,0 kg/m ²
4 Fjernvarme	15030 kg	2,1 kg/m ²
5 Biobrensel	0 kg	0,0 kg/m ²
6. Annen energikilde	0 kg	0,0 kg/m ²
7. Solstrøm til egenbruk	-0 kg	-0,0 kg/m ²
Totalt utslipp, sum 1-7	18999 kg	2,7 kg/m²
Solstrøm til eksport	-0 kg	-0,0 kg/m ²
Netto CO2-utslipp	18999 kg	2,7 kg/m²



SKORREIKNIR

Building floor area	7095	m ²
Notional building energy demand	518,40	MJ/m ² /annum
Actual building energy demand	363,24	MJ/m ² /annum
Notional building primary energy consumption	163,60	kWh/m ² /yr
Actual building primary energy consumption	113,90	kWh/m ² /yr
Notional Building Emission Rate	2,70	kgCO ₂ /m ² /yr
Actual Building Emission Rate	1,90	kgCO ₂ /m ² /yr
Actual Bdg Emission Rate improvement over Notional Building	29,63%	
Demand Energy Performance Ratio (EPR)	0,1978	
Consumption Energy Performance Ratio (EPR)	0,3598	
CO ₂ Energy Performance Ratio (EPR)	0,2837	
Overall Building Energy Performance Ratio (EPR _{NC})	0,8413	

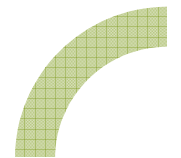
Example: Ene01 building performance translator



VSÓ RÁÐGJÖF

○ ÁLYKTUN

- Hönnuðir meðvitaðri
- Gera betur en Byggingarreglugerðin
- Stöðluð aðferðafræði ekki til og kröfur ábótavant
- Sóknarfæri í aðlögun á stöðluðum gildum
- Orkumælingar eftir framkvæmd



VSÓ RÁÐGJÖF



TAKK FYRIR