Boreal

At the drawing board, a typeface may be optimized for branding, signage, or publication design, but its true success is proven in real-world use. Boreal is a crisp and congenial sans serif that has already been put through its paces.

Born as a custom face for Canadian airline Air Inuit, Boreal is not only the logo font, but also serves branded text on everything from tiny disclaimers and complex route maps to in-flight magazine headlines. It even looks great on the massive liveries of the airline's fleet of Boeing 737s. Given this range of uses, the type had to be as versatile and legible as possible, while retaining Air Inuit's welcoming identity. The fonts also required language support for the local Inuit languages of Northern Quebec, now known as Nunavik. This makes Boreal one of the few commercial typefaces with Latin/Inuktitut character sets that were designed concurrently and meant to be used together.

Boreal's flexibility is bolstered by five weights, each with italics, and a set of useful dingbats, including circled index numbers, arrows, and basic geometric shapes. Two stylistic alternates stand by for a more casual tone: a single-story 'a' with an upright italic construction, and a single-story 'g'. Backed by practical experience, Boreal offers clean, approachable type for any corporate or editorial use, and its clarity and openness are also ideal for UI design and wayfinding. With Boreal, you always know where you're going.

10 styles:
5 weights
Roman & Italic

Boreal ExtraLight	*Boreal ExtraLight*
Boreal Light	*Boreal Light Italic*
Boreal Regular	*Boreal Italic*
Boreal Medium	***Boreal Medium Italic***
Boreal Bold	***Boreal Bold Italic***

Ecolabelling Ice

ExtraLight

Northern Ireland

ExtraLight Italic

Biological Paint

Light

Waste Hierarchy

Light Italic

Rebound Effect

Regular

Efficiency Paper

Italic

Land Recycling

Medium

Bins Conceptual

Medium Italic

Control Theory

Bold Italic

Overpopulation

Bold Italic

Boreal ExtraLight

Information Horticulture

Invasive Species Complexity Science

Sustainable Market Ipat Design For Environment City

Brundtlandt Commission Report (1983)

POLLUTER PAYS PRINCIPLE Sustainability Brand Thinking

LANDSCAPE INSTITUTE ART Institute Urban Reforestation

FISHERIES COGENERATION Metric Earth Immune System

INDUSTRIAL SYMBIOSIS TIMELINE Container Deposit Legislation Living

TECHNOLOGY ASSESSMENT OSLO Peak Oil Janzen–Connell Hypothesis

SUBURBAN NATURAL RESOURCES Royal Botanic Gardens, Kew Deserts

Boreal ExtraLight

BATTERIES EMERGENT

SOIL SCIENCES

URBAN PLANNING

GLOBAL POSITIONING

LANDSCAPE ENGINEERING

ICPD PROGRAMME OF ACTION (1994)

INFRASTRUCTURE FORMAL Industrial Symbiosis Timeline

CODES RADIATIVE FORCING Frogner Park Francisco Varela

ECONOMIC DEVELOPMENT Solar Radiation Management

GLOBAL WARMING CONTROVERSY Dematerialization (Economics) Ppm

METABOLIC THEORY OF ECOLOGY Earth's Average Surface Temperature

COLD BLOB (NORTH ATLANTIC) PH Energy Accounting Ecological Design

Design for the Environment is a global move ment targeting design initiatives and incorpor ating environmental motives to improve prod uct design in order to minimize health and en vironmental impacts. The Design for the Envi ronment (DfE) strategy aims to improve tech nology and design tactics to expand the scop e of products. By incorporating eco-efficiency into design tactics, DfE takes into considerati on the entire life-cycle of the product, while s till making products usable but minimizing re

Modern day businesses all aim to produce goods at a low cost while maintaining quality, staying competitive in the global marketplace, a nd meeting consumer preferences for more environmentally friendly products. To help businesses meet these challenges, EPA encourage s businesses to incorporate environmental considerations into the d esign process. The benefits of incorporating DfE include: cost saving s, reduced business and environmental risks, expanded business and market opportunities, and to meet environmental regulations. The E PA has imposed the National Ambient Air Quality Standards (NAAQS

The primary goal of eco-industrial development is a significant and continuous improvemen t in both business and environmental performance. Herein, the notion of industry not only r elates to private-sector manufacturing but also covers state-owned enterprise, the service s ector as well as transportation. EID's twin guideline is reflected specifically in the "eco" of e co-industrial as it resembles ecology (decrease in pollution and waste) and economy (incre ase in commercial success) at the same time. In order to build a framework of defining an en terprise's sustainable performance at the micro level, resource use optimization, minimizati on of waste, cleaner technologies and pollution limits are used in achieving a broad range of goals in EID. Eco-industrial development hence explores the possibility of improvement at

Boreal ExtraLight

ᑌᑦᓱᒪᓂᐅᑎᑦᑐᒍ, ᖃᔭᖅ ᐱᒻᒪᕆᐅᓂᖅᐸᐅᓯᒪᕗᖅ ᐱᐅᒃᑯ
ᑎᐅᑦᓱᓂ ᐊᓐᓇᐅᒪᖑᓱᐊᖅᓂᒧᑦ. ᐅᐱᖅᖕᖑᔭᐅᓚᖅᒪᑦ, ᐃᓄᐃᑦ
ᐊᑦᔨᒌᓐᖏᑐᓂ ᒪᖅᑫᓗᕕᒥᐅᑦ ᑲᑎᐅᖅᖃᐸᑦᑐᕕᓃᑦ ᐊᑕᐅᓯᖅ
ᒥ ᓄᓇᒥ ᖁᓐᓂᐅᒋᐊᖅᑐᓯᑎᒃ ᒪᖁᑦᑎᓂᒃ. ᐅᑦᑖᒪᓇᒃᑯᑦ
ᐱᒋᐊᖅᐸᓱᑎᒃ ᓱᕿᓂᓘᓐᓃᑦ ᔭᖅᑭᑕᐅᖅᑎᓇᒍ. ᓱᕗᑦᑕᐹᖅ
ᐊᓪᓗᒋᐊᕈᓯᕕᓂᖅ ᖁᓐᓂᐅᒋᐊᓯᒻᒪᑕ, ᑎᑦᔭᓗᓐᓂᒃ ᓄᐊᑦᓯ
ᓂᖅ, ᓄᓇᕕᒻᒥ ᓇᐹᖅᑐᖃᓐᖏᒪᑦ. ᐃᓄᐃᑦ ᐃᒋᑦᓯᑕᐅᖅᓯᒪᓲ
ᒍᓐᓂᖕᒋᑦᑐᑦ ᕿᔪᒻᒥᒃ, ᐊᖕᒋᔫᖑᓗᐊᖅᐸᑦ ᒥᑭᔫᖑᓗᐊᖅᐸᓘᓐ
ᓃᑦ, ᖃᔭᑕᐊᓇᑦᓴᓇᖑᒥᐅᒃ. ᐊᑐᓂᑦ ᖃᔭᐅᑉ ᑐᑕᒫᖕᒋᑦ ᕿ
ᔪᑦᑕᖕᒋᑦ ᑖᓐᓇᓗᑑᒋᐊᖅᑲᖅᐸᑐᕕᓃᑦ ᐋᖅᑭᓯᒪᑦᓯᐊᓗᑯᐊᐱ
ᒋᐊᖃᖅᓯᑎᓗ. 1000 ᒥᑦᔮᓃᑦᑐᑦ ᖃᔭᑕᐊᓇᑌᑦᔭᑦ, ᐃᓘᓐᓇ

ᕿᔪᒋᒋᐊᓚᓚᒫᒥᓂᒃ ᐱᓯᒪᓚᖅᒥᒃ, ᓄᐊᑦᓯᒋᐊᖃᓯᕙᓐᓂᒥᔪᑦ ᓅᒻᒪᑐᓂᒃ ᓇᑦᓯᔅᓂᒃ ᖃ
ᔅᒥᒃ ᐊᒥᐊᖅᓯᒍᑎᑦᓴᓂᒃ, ᐊᖕᒍᑏᑦ ᒪᖁᒍᓐᓇᓯᖅᑯᑦᓱᒍᑦ. ᐊᖕᒋᓂᖅᐹᖕᒋᑦ ᕿᔫᑦ ᐊᒥᐊᖅᓯ
ᒍᑕᐅᕙᑦᑐᕕᓃᑦ ᖃᔭᐅᑉ ᑎᒥᖅᑕᐅᓂᖕᖑᓄᑦ. ᖁᓐᓂᐅᒋᐊᓐᖑᓯᒻᒪᑕ ᐅᑦᑖᑯᑦ, ᓂᕕᐊᖅᓯ
ᐊᑦ ᕿᑐᒻᒪᔅᒋᐊᖅᑲᖅᐸᑐᕕᓃᑦ ᕿᔫᑦ ᑭᓂᑎᖅᓱᒋᑦ. ᒥᖅᓱᑕᐅᓚᐅᖅᑎᒃ ᕿᔫᑦ, ᑎᖅᑎᑎᑕᐅᖅ
ᖄᐸᑦᑐᕕᓃᑦ ᒥᖅᖁᐃᔅᑎᑕᐅᑦᓱᑎᒃ. ᕿᔪᓐᓂᒃ ᐅᐃᒍᓂᖅ ᒥᖅᓱᓯᒪᓪᓗᑯᐊᐱᒋᐊᖅᑲᖅᐸᑐᕕ
ᓂᖅ, ᑭᓗᖃᑦᓯᐊᒪᓇᐊᐱᓪᓗᓂ; ᑭᓪᓚᖅᑲᒋᐊᖅᑲᖑᑖᖑᓂ. ᐃᓄᓛᑦ ᓱᓇᓱᐊᖅᑎᐅᓹᕕᓂᖅ ᖁ
ᓐᓂᐅᑐᖅᑲᓪᓕᖅᒪᑦ – ᐊᖕᒍᑏᑦ, ᐊᖅᓂᑦ ᐱᐊᕓᓪᓗ. ᐃᓚᖕᒋᑦ ᑐᓛᓚᐅᖅᑎᓗᒋᑦ, ᐃᓚᖕᒋᓪᓗ
ᒥᖅᓱᑏᑦ, ᐃᑲᔪᖅᑏᑦ ᓂᖅᓯᐅᑏᑦᑐ. ᐱᐊᕓᑦ ᐊᒫᖅᑎᐅᕝᕙᑦᑐᕕᓃᑦ ᓄᑕᖅᓂᒃ ᖁᓐᓂᐅᑐᓂᒃ
ᐊᖠᕕᐊᓂᐊᓐᖏᒪᑕ. ᖁᓐᓂᐅᓂᖅ ᔭᓗᒣᑦᑑᕝᕙᑦᑐᕕᓂᖅ, ᕿᔫᑦᑐ ᑎᐸᖅᑲᖅᓱᑎᒃ ᒪᒪᓐᖏᑐ

ᖃᔭᓚᒫᑦ ᐱᔭᓅᖅᓯᒪᓚᖅᒪᑕ, ᐃᓄᐃᑦ ᐱᕈᔭᕕᓂᖅᒥᓂᒃ ᖁᓐᓂᐅᓂᖅᑲᓚᐅᖅᑎᓇᒍᓘᓐᓃᑦ ᐁᑦᓯᓯᕙᑦᑐᕕᓃᑦ, ᑌᒪ ᓂᓇᓪᓛ
ᓂᖅᑲᓂᐊᓚᖅᒪᑦ. ᑭᖕᒍᓂᐊᒍᑦ, ᐊᖕᒍᑏᑦ ᒪᖁᓯᕙᑦᑐᕕᓃᑦ ᐃᒪᖅᐱᒥ. ᐊᐅᔭᒥ (ᐅᐱᖅᖕᖑᒥ), ᐃᓚᒌᑦᑐᑦ ᐊᐅᓚᕙᑦᑐᕕᓃᑦ ᓄ
ᓇᑐᐃᓐᓇᒥ ᐸᐅᖅᓱᑎᒃ ᑕᓯᖅᒥᑦ ᑕᒥᖅᒧᑦ ᖃᔅᓴᑐ ᓇᓪᒪᓯᕙᑦᓱᒍ ᑕᔫᑦ ᐊᑯᓐᓂᖏᓐᖏᓐᓂ. ᑌᔭᐅᒍᓯᖕᖑ ᑖᑦᓱᒪᐅᑉ ᐃᑎᑦᔭ
ᖅ. ᑌᒣᓘᖅᓱᑎᒃ ᐊᐅᓚᓚᖅᒥᒃ, ᐊᐅᔭᓛᖅ (ᐅᐱᖅᖕᖑᓚᓛᖅ), ᐊᑖᑕᒋᔭᖅ ᐸᐅᖅᐸᑐᕕᓂᖅ ᖃᔭᖅᒥᒃ ᐅᓯᔪᒥᒃ ᓄᓚᐊᖕᖑ
ᓂᒃ ᕿᑐᖅᖕᖑᖕᒋᓐᓂᓗ. ᕿᓪᒦᑦ ᒪᓚᑉᐸᑐᕕᓃᑦ ᓯᓅᑎᒍᑦ, ᓇᓪᒪᓯᑎᒃ ᐱᐅᒃᑯᑎᓂᒃ. ᓯᖅᕙᓚᖅᔪᐊᓂᒃ ᐃᖕᒋᖅᓚᐅᑎᖅᑲᓚᐅ
ᖅᑎᓇᒍ, ᑖᒃᑯᐊ ᐊᐅᓚᓃᑦ ᐱᐅᔪᑦᑕᓇᐊᓗᕕᓃᑦ ᓴᒪᓇᖅᑐᒪᓇᐅᑦᓯᑎᑦᑐ. ᐃᑦᑐᐃᑦ ᐊᐳᑏᑦ ᐊᑦᔨᒌᑦᔭᖕᒋᑦᑐᓂᒃ ᓴᓇᓪᒪ
ᖃᖅᐸᑐᕕᓃᑦ ᐃᓚᒌᑦᑐᑦ ᐊᖕᒋᓂᖕᒋᓐᓂᒃ ᒪᓚᑦᑎᑕᐅᑦᓱᑎᒃ. ᑭᓄᓘᓐᓃᑦ ᐃᑦᑐᒥᓂᒃ ᑯᑐᔾᔭᖅᑲᐳᒪᕙᓐᓂᖕᒋᑦᑐᖅ, ᐃᓱᖅ
ᓗᕕᓂᖅᑲᑦᑐᐊᑎᓱᑦᑌᓚᕙᑦᓱᓂᓗ, ᐱᖅᓱᕕᓂᐅᓚᖅᒪᓗᐊᓐᖑᒍᐊᖅ. ᐃᑦᑐᐃᑦ ᐊᐳᑏᑦ ᖃᐅᑖᓪᑦ ᓴᓗᒪᔅᑕᐅᕙᑦᑐᕕᓃᑦ. ᑐ
ᐸᑐᐊᖅᒥᒃ ᓯᓂᖠᕕᓂᖅᒥᓂᒃ (ᐊᐳᑎᐅᒥᔪᒥᒃ) ᒪᓂᕓᓴᕙᑦᑐᕕᓃᑦ ᑐᒥᑐᖅᓯᒍ. ᐃᑦᑐᐃᑦ ᒪᖅᐳᓂᒃ ᑲᑕᖅᑲᕙᑦᓗᓯᕖᓂᑦ.

Boreal ExtraLight Italic

Green Roofs

Nervous City

Service Economy

Switzerland Institute

Architectural Association

Source–Sink Dynamics Botany

Kalundborg Eco-Industrial Park Footprint

EARTH'S RADIATION BUDGET National Academy Of Sciences

JAY WRIGHT FORRESTER ART Deforestation Cradle To Cradle

ALTITUDE LATITUDE THEORY Infrastructural Capital Canada

CLIMATE CHANGE MITIGATION SOOT Carbon Dioxide In Earth's Atmosphere

RAW MATERIAL WASTE LEGISLATION Extended Producer Responsibility G77

JOURNAL OF INDUSTRIAL ECOLOGY Long-Term Effects Of Global Warming

Boreal ExtraLight Italic

PACKAGING NONLINEAR SUSTAINABILITY WASTE-TO-ENERGY LANDSCAPE DESIGNER SUBSTANCE FLOW ANALYSIS STAKEHOLDER ANALYSIS INFORMATION

GROSS DOMESTIC PRODUCT Environmental Graphic Design

TRAGEDY OF THE COMMONS Theoretical Ecology Ice Sheets

EVOLUTIONARY ECONOMICS Field Operations Stratospheric

MEDIEVAL GARDEN ANDRES DUANY Climate Change Feedback Cybernetics

ARCHITECTURAL ASSOCIATION SOIL Unified Neutral Theory Of Biodiversity

CLOUD CONDENSATION NUCLEI ICE World Glacier Monitoring Service Ppm

Boreal ExtraLight Italic

Soil is the mixture of minerals, organic matter, g ases, liquids, and the countless organisms that together support life on Earth. Soil is a natural body known as the pedosphere and which perfo rms four important functions: it is a medium fo r plant growth; it is a means of water storage, s upply and purification; it is a modifier of Earth's atmosphere; it is a habitat for organisms; all of which, in turn, modify the soil. Soil is considered to be the "skin of the Earth" and interfaces with its lithosphere, hydrosphere, atmosphere, and b

Given sufficient time, an undifferientated soil will evolve a soil profile wh ich consists of two or more layers, referred to as soil horizons, that diffe r in one or more properties such as in their texture, structure, density, po rosity, consistency, temperature, color, and reactivity. The horizons differ greatly in thickness and generally lack sharp boundaries. Soil profile dev elopment is dependent on the processes that form soils from their pare nt materials, the type of parent material, and the factors that control s oil formation. The biological influences on soil properties are strongest near the surface, while the geochemical influences on soil properties inc

Experiments into what made plants grow first led to the idea that the ash left behind when plan t matter was burned was the essential element but overlooked the role of nitrogen, which is not left on the ground after combustion. In about 1635, the Flemish chemist Jan Baptist van Helmo nt thought he had proved water to be the essential element from his famous five years' experim ent with a willow tree grown with only the addition of rainwater. His conclusion came from the f act that the increase in the plant's weight had apparently been produced only by the addition o f water, with no reduction in the soil's weight. John Woodward (d. 1728) experimented with vari ous types of water ranging from clean to muddy and found muddy water the best, and so he co ncluded that earthy matter was the essential element. Others concluded it was humus in the soi

Boreal ExtraLight Italic

ᓴᕕᐅᔭᕐᑕᕕᓂᖅ ᓂᓕᒃ ᐃᒐᑖᓕᐊᒍᕙᑦᑐᕕᓂᖅ, ᓴᓗᒻᒪᓴᕐᑕᐅᓗ ᑭᒋᐊᖃᓰᒍᑦᓯᓂᓗ ᐃᓪᓗᖅ ᖃᐅᒪᓂᐊᕐᒪᑦ ᐃᑯᒪᑐᐊᒍᕙᓐᓂᕋᒥ ᐅᓪᓘᓂᖕᒐᓂ. ᐃᓪᓘᑉ ᓇᑎᖕᒐ ᓴᓗᒻᒪᓴᕐᑕᐅᑎᐊᖃᕐᐸᓂᕐᒥᕆᖅ, ᐋᖃᓗᐃᔭᕐᓯᒍ, ᐃᓯᕐᓗᐃᔭᕐᓯᒍ ᐃᑖᓐᓂᓗ ᐃᑎᕈᐃᔭᕐᓯᒍ. ᐊᐳᑎᑐᖃᖅ ᐲᕐᑕᐅᓯᓂ ᐊᐳᓯᕐᓯᒍ ᓅᑖᒥᒃ. ᐃᓪᓕᖅ ᐃᓪᓘᑉ ᑐᖕᒑᓃᑦᑐᖅ ᑲᒪᒋᔭᐅᖕᒋᓐᓇᒋᐊᖃᕐᐸᑐᕕᓂᖅ ᓴᓗᒣᑦᓕᓂᕐᐸᐅᓰᒍᓐᓂᕋᒥ. ᐃᓄᐃᑦ ᓴᓗᒪᑎᑦᓰᓇᕋᓯᐊᕐᐸᑐᕕᓃᑦ ᐃᓅᕕᑦᓴᓯᐊᒍᑎᑦᓯᒐᓯᐊᕐᓯᑎᓪᓗ ᐃᓪᓗᒥᓐᓂᒃ, ᒐᒫᑦᓴᓇᖅ ᐅᓪᓗᒥᐅᑕᕐᑐᖅ ᐃᓪᓗᕈᐊᒥᓂᒃ ᓴᓗᒪᑎᑦᓰᓇᕋᓯᐊᕐᐸᑲᒥᒃ. ᖁᕕᐊᑭᔭᐅᓐᖏᓂᕐᐹᕕᓂᖅ ᓴᓗᒻᒪᓴᓂᖅ ᓇᑎᐅᑉ ᖁᐱᓯᒪᓂᖕᒋᓐᓂᒃ. ᓴᓗᒻᒪᓴᕐᑕᐅᑐᐊᕋᒥᒃ ᐃᓪᓗᐃᑦ ᓴᓗᒪᕆᐊᐱᐅᕙᑦᑐᕕᓃᑦ ᖃᐅᒪᕆᐊᐱᐅᑦᓯᑎᑦ

ᐅᓪᓛᑯᑦ ᐃᓪᓗᖅ ᐊᐳᑎᒃ ᐅᖁᐃᑦᑐᒪᓇᐅᕙᑦᑐᕕᓂᖅ ᐅᕐᖂᓯᓴᐅᑎᕙᓐᓂᓴᖕᒋᒻᒪᑕ ᐅᓐᓄᐊᒥ. ᑭᓇᓕᒫᑦᓯᐊᖅ ᓯᓂᑉᐸᑐᕕᓂᖅ ᐊᓐᓄᒐᑦᑑᓯᓂ, ᐊᓐᓅᕋᖕᒋᑦ ᐃᒧᓯᒪᑎᓪᓗᒋᑦ ᐃᑦᑕᐅᑉ ᖃᖕᒐᓂ ᓂᕈᒥᑦᑑᑎᒐᓯᐊᒧᑦ. ᑐᑉᑲᒥᒃ ᑲᒥᖕᒋᑦ ᖁᐊᕐᑭᐅᕙᑦᑐᕕᓃᑦ, ᐊᑎᒃᒐᕋᓯᐊᕐᑕᐅᑎᐊᖃᕐᐸᓯᑎᓪᓗ ᖁᐊᒍᒻᒪᑕ. ᖃᐅᑕᒫᑦ ᐱᐊᒐᑦ ᐃᒥᕐᑕᓇᐊᖃᕐᐸᑐᕕᓃᑦ ᐊᓂᑦᓯᓗᑎᓗ ᖁᕕᒥᒃ ᓯᓕ ᐃᒃᑮᓇᕐᑐᒪᓇᐅᒐᓗᐊᕐᒪᑦ. ᒐᒪ ᒐᒫᑦᓴᓇᖅ ᐱᒪᐅᑦᓵᓂᐊᓕᕐᒥᒐᒥᒃ ᐊᓈᓇᑦᓯᐊᑯᒻᒥᓂᒃ ᐃᓄᑐᖃᕐᓂᓗ ᓄᓇᕐᖃᑎᒥᓐᓂᒃ.ᐅᕐᖁᓯᓴᐅᑎᑐᐊᕕᓂᖅ ᐃᑯᒫᑦᓯᓂᓗ ᐃᓪᓘᑉ ᐊᐳᑎᐅᑉ ᐃᓗᐊᓂ ᖁᑦᑕᖅ. ᐊᓐᓅᕋᑦ ᐸᓂᕐᓯᐊᒍᕙᑦᑐᕕᓃᑦ ᖁᑦᑕᐅᑉ ᖁᑖᓂ. ᐊᖑᑏᑦ ᓇᑦᓯᑐᕕᓂᐅᓐᖏᑐᐊᕐᒪᑕ ᐅᕐᓯᐃᕈᑐᐊᕐᒪᓗ, ᐊᓂᕐᒐᑦ ᐅᖁᐃᑦᑐᐊᓘᕙᑦᑐᕕᓃᑦ ᑖᕐᑑᓯᑎᓪᓗ. ᐃᑕᐲᑦᑐᑦ ᐊᖑᑎᖃᖕᒋᑐᐊᕋᒥᒃ ᒪᕐᑭᑦᑎᒥᒃ, ᐃᓅᓯᖕᒋᑦ ᐊᕐᓯᕈᓐᓇᓂᕐᓴᐅᓲᕕᓃᑦ. ᐃᓄᐃᑦ ᒐᒪᓐᖕᒐᓕᒫᑦᓯᐊᖅ

ᐃᓄᐃᑦ ᒐᒪᓐᖕᒐᓂᐊᐱᒃ ᐱᓇᓯᐊᕋᑦᓴᖃᓲᕕᓃᑦ. ᐃᓅᓯᐅᑦᓯᓂ ᐱᐅᓯᐅᒻᒪᑦ. ᐊᖑᑏᑦ ᒪᕐᑫᓲᕕᓃᑦ ᖃᐅᑕᒫᑦ. ᐊᕐᓂᑦ ᒐᒪᓐᖕᒐᑦ ᐃᓪᓗᓂᑦᓴᑎᓪᓗᒋᑦ ᒥᕐᓯᓯᑎᓪᓗ. ᐱᐊᒐᑦ ᐃᑲᔪᕐᑎᐅᓲᕕᓃᑦ ᐊᓅᓇᒥᓄᑦ ᐊᓅᓇᑦᓯᐊᑯᒥᓄᓪᓗ ᐃᓪᓗᒥ ᐊᐳᑎᒥ ᑐᐱᕐᒥᓗ. ᐃᓪᓗᒥᒃ ᐊᐳᓯᕐᑎᒐᓕᕙᑦᑐᕕᓃᑦ. ᓂᕕᐊᕐᓯᐊᑦ ᐃᑲᔪᕐᓯᒪᕙᑦᑐᕕᓃᑦ ᕿᑦᓯᓇᔪᓂᒃ. ᐃᓯᒣᓇᕿᑦᓯᐊᓕᐅᕐᓯᒪᑦᓴᒐᑎᓗ. ᑭᓇᓕᒫᑦᓯᐊᑦ ᐃᑲᔪᕐᓯᒪᕙᑦᑐᕕᓃᑦ ᕐᑫᓐᓂᐅᓇᓕᑐᐊᕐᒪᑦ. ᕿᔪᐃᑦ ᓄᐊᑕᐅᑭᐊᖃᕐᓯᑎᒃ; ᑖᓐᓇ ᐊᕐᓂᑦ ᐱᓇᓯᐊᒐᕕᓂᖕᒐ. ᕿᔪᖅ ᐊᔪᕐᓇᓲᕕᓂᖅ ᓄᓇᕕᒃ ᓇᐸᕐᑐᖃᓐᖑᑐᒦᒻᒪᑦ. ᑎᑦᔭᓗᓐᓂᒃ ᓯᑦᔮᒦᑦᑐᓂᒃ ᐳᑯᑭᐊᖃᕐᐸᑐᕕᓃᑦ. ᐱᐅᓯᐅᓐᓂᔭᖕᒋᑦᑐᖅ ᑕᑯᓐᓇᓇᐊᒥᒃ ᑭᓇᑐᐃᓐᓇᒥᒃ ᐃᕿᐊᓯᑦᑐᒥᒃ. ᑖᕐᓯᒐᓗᐊᕐᒪᑦ, ᐊᕐᓂᑦ ᑲᒻᒥᐅᖕᒋᓈᐸᑦᑐᕕᓃᑦ ᐊᓐᓅᕐᑕᐅᕐᓯᑎᑦᑑᓃᑦ ᖁᑦᑕᐅᑉ ᐃᑯᒪᒍᑐᐊᐱᖕᒐᑕ ᑭᓪᓕᖕᒐᓂ. ᑭᓯᐊᓂ ᑕᒪᓐᓇ ᓯᖕᒋᐅᓯᒪᑐᐃᓐᓇᑕᕕᓂᖕᒐ, ᒐᒣᒻᒪᑦ ᑕᑯᓐᓇᕈᓐᓇᓯᐊᖕᒋᓐᓈᐸᑦᑐᕕᓃᑦ, ᐊᒻᒪᓗ ᒐᑦᓯᒪᓂᐅᑎᓪᓗᒍ ᑭᓇᒎᓐᓃᑦ ᐃᔭᐅᓯᔮᖑᒐᓂ. ᐅᑭᐊᑦᓴᐅᓕᕐᒪᑦ, ᐃᓄᐃᑦ ᐃᓅᒐᓯᐊᕈᓯᖕᒐ ᐅᕐᑯᒣᓐᓂᓴᐹᕐᐸᑐᕕᓂᖅ ᑐᐲᑦ ᐅᖁᐃᓪᓕᓕᐅᒥᑐᐊᕐᒪᑕ ᐊᐳᑎᖃᑦᓯᐊᕋᑕᕋᓂᓗ ᐃᓪᓗᓕᒍᑎᑦᓴᒥᒃ. ᐃᓄᐃᑦ ᕿᐅᖕᒋᓐᓇᓯᓲᕕᓃᑦ ᐅᓪᓛᑯᑐᐊᓐᖑᐊᖅ ᓯᓕ ᒐᒣ

Boreal Light

Psychology

Peter Senge

Metric Business

Scientific American

Precautionary Principle

Nature Preserves Appliances

National Ambient Air Quality Standards

SOOT ANTI-CONSUMERISM Greenhouse Effect Emergent

GREENLAND ICE SHEET PH Complex Adaptive Ecoregion

CHLOROFLUOROCARBONS Scientific Consensus Lumber

SHELFORD'S LAW OF TOLERANCE Food Security Climate Commitment

JAMES GRIER MILLER EFFICIENCY Dematerialization (Economics) Sres

SOCIAL EARTH'S ENERGY BUDGET Global Average Air Temperature Soil

Boreal Light

SEA LEVEL SUBURBAN PRECIPITATION URBAN PLANNING SUSTAINABLE DESIGN RECURSIVE RECYCLING PH

CLIMATE CHANGE AND ECOSYSTEMS

ANTHONY STAFFORD BEER
ECONOMIC DEVELOPMENT
PLASTIC ALPES-MARITIMES
CANADA LANDSCAPE GARDENING
JAPANESE GARDEN SOIL SCIENCE
INFRASTRUCTURAL CAPITAL ŌTSU

Earth's Energy Budget Reuse
Heat Content Of The Oceans
Journal Of Industrial Ecology
Global Average Air Temperature City
Competitive Enterprise Institute Ice
Sustainable Landscape Architecture

Industrial ecology was popularized in 1989 in a Scientific American article by Robert Frosc h and Nicholas E. Gallopoulos. Frosch and G allopoulos' vision was "why would not our in dustrial system behave like an ecosystem, w here the wastes of a species may be resource to another species? Why would not the outp uts of an industry be the inputs of another, th us reducing use of raw materials, pollution, a nd saving on waste treatment?" A notable ex ample resides in a Danish industrial park in t

The scientific field Industrial Ecology has grown quickly in recent ye ars. The Journal of Industrial Ecology (since 1997), the Internationa l Society for Industrial Ecology (since 2001), and the journal Progre ss in Industrial Ecology (since 2004) give Industrial Ecology a stron g and dynamic position in the international scientific community. In dustrial Ecology principles are also emerging in various policy realm s such as the concept of the Circular Economy that is being promot ed in China. Although the definition of the Circular Economy has yet to be formalized, generally the focus is on strategies such as creatin

One of the central principles of Industrial Ecology is the view that societal and technologi cal systems are bounded within the biosphere, and do not exist outside of it. Ecology is us ed as a metaphor due to the observation that natural systems reuse materials and have a l argely closed loop cycling of nutrients. Industrial Ecology approaches problems with the h ypothesis that by using similar principles as natural systems, industrial systems can be im proved to reduce their impact on the natural environment as well. The table shows the gen eral metaphor. The Kalundborg industrial park is located in Denmark. This industrial park is special because companies reuse each other's waste (which then becomes by-products). F or example, the Energy E2 Asnæs Power Station produces gypsum as a by-product of the

Boreal Light

ᑌᑦᓱᒪᓂᐊᓗᒃ, ᐃᓚᒌᑦᑐᑦ ᓄᓇᑐᖅᓕᒥᐅᒍᐃᓐᓅᓱᑎᒃ ᐃᓅᓲ ᕕᓃᑦ ᐃᓗᐃᒃᑲᓚᕆᐅᑦᓱᑎᒃ. ᐱᓇᓱᐊᖃᑦᓴᓕᒫᑦᓱᐊᑦ ᓄᓇᓕ ᓕᒫᒧᑦ ᐱᓇᓱᐊᖅᑕᐅᕙᑦᑐᕕᓃᑦ, ᐱᓇᓱᐊᖃᑦᓴᓗ ᐊᕕᑦᑐᑕᐅ ᓲᖑᒐᑎᒃ ᐱᓇᓱᐊᕆᐊᓖᑦ ᐊᖅᖄᒍᖏᑎᒍᑦ. ᑌᒪᓐᖓᓕᒫᑦᓱ ᐊᖅᒃ, ᐱᐊᒍᑦ ᐃᑲᔪᖅᑎᐅᔫᕕᓃᑦ ᐊᖓᔪᖅᖅᑳᒥᓄᑦ ᐊᓅᓇᑦᓯ ᐊᑯᒥᓄᑦᓗ. ᑌᒫᒃ ᐱᔭᑦᓴᖅᑲᑦᓴᖃᒥᒃ ᐃᓱᒣᓇᖅᑭᑦᓱᐊᐸᓐᓂᓴ ᖏᑦᑐᑦ. ᐊᖓᔪᖅᖅᑳᖏᑦ ᑐᑭᑖᓲᕕᓃᑦ ᖅᑲᖓ ᐃᓱᒣᓇᖅᑭ ᒍᓐᓇᓂᖏᓐᓂᒃ. ᐆᑦᑑᑎᒋᑐᒍ, ᐱᐊᒍᑦ ᐊᓂᖅᖃᒥᓐᓂᒃ ᓴᓗ ᒻᒪᓴᕆᐊᖅᑲᖅᐸᑦᑐᕕᓃᑦ, ᖅᑭᓱᓐᓂᒃ ᑭᓂᑎᖅᓗᑎᒃ, ᐃᒥᖅᑕᖃᖅᓗ ᑎᒃ, ᓄᑲᖅᒥᓂᒃ ᐯᓇᑦᓱᓗᑎᒃ, ᖅᑯᖅᕕᓂᒃ ᐊᓂᐊᑎᓇᓗᑎᒃ, ᐃᑲᔪᖅᓱᒪᓗᑎᒃ ᐊᓅᓇᑦᓱᐊᑯᒥᓂᒃ, ᐊᓱᖏᓐᓂᓗ. ᒪᖅᖃᑦᑎᒃ

ᑎᓕᐅᖅᑕᐅᓕᑐᐊᖃᒥᒃ ᐅᐱᒍᓲᓱᔭᐅᓂᐊᖅᓂᖃᖅᐸᑐᕕᓃᑦ ᐊᖓᔪᖅᖅᑳᒥᓄᑦ, ᐅᖅᑲᐅᑎᔭᐅᑦᓱᑎ ᑦᓲᓃᑦ ᐊᓃᓐᖑᐊᕈᓐᓇᓚᖕᓕᕆᐊᖏᓐᓂᒃ ᐱᔭᑦᓴᒥᓂᒃ ᐱᔭᕇᑐᐊᕈᑎᒃ. ᑕᒪᓐᓇ ᑲᑦᓱᖕᖁ ᑦᓕᓴᕙᑦᑐᕕᓂᖅ ᐱᐊᖅᖃᓂᒃ ᐱᓇᓱᐊᕆᐊᓚᒻᒥᓂᒃ ᐱᔭᓐᓂᒃᑲᐱᓐᓂᓴᐅᑕᖅᑭᑦᓱᑎᑦ. ᓂᕕᐊᖅᓱ ᐊᑦ ᐊᓅᓇᒥᑕ ᑭᑦᓚᖓᓃᕙᑦᓗᐸᑦᑐᕕᓃᑦ, ᑕᑯᓐᓇᐅᔮᖅᓱᒋᑦ ᐃᓚᓐᓂᐊᕕᒋᑦᓱᒋᑦᓗ ᐊᓐ ᓄᖄᓕᐅᑭᓱᖅᓂᒃ. ᑭᑐᖏᑦ ᐱᐅᑦᓱᐊᖏᒃᑲᓗᐊᖅᒪᑕ, ᐊᓅᓇᖏᑦ ᐅᐱᒪᐅᑦᔫᑕᐃᓐᓇᑉᐸᑦᑐᐊ ᓃᑦ. ᑕᒪᓐᓇ ᑲᑦᓱᖕᖁᑦᓚᓴᕙᑦᑐᕕᓂᖅ ᓂᕕᐊᖅᓱᐊᓂᒃ ᐃᓚᑦᓱᓚᐅᒥᒍᒪᓕᖅᑭᑎᑦᑐᒋᑦ ᓄ ᑖᓂᒃ ᓱᓇᑐᐃᓐᓇᓂᒃ. ᐅᑦᑐᒥᑕ ᑕᑯᓲᖑᒍᓐᓃᑐᒍᑦ ᐱᐊᖅᖃᓂᒃ ᑕᒪᒃᑯᓂᖓ ᐱᓇᓱᐊᖅᑐ ᓂᒃ ᐊᓂᖅᖃᐅᑉ ᐃᑐᐊᓂ. ᐃᓄᒻᒪᕇ ᑕᑯᕙᑦᓚᓱᒪᓕᖅᑐᑦ ᐊᑦᓴᐅᖏᑦᑐᒪᓇᐅᑕᓇᐊᖓᓂ ᒃ ᐃᓅᓱᐅᑕᖅᑑᑉ. ᐃᓖᓐᓂ ᐅᑎᖅᐸᓱᑎᒃ ᐅᖅᖅᑭᓇᖅᓱᑎᒃ, ᐃᓖᓐᓂᓗ ᐆᒪᔭᖅᓱᑎᒃ. ᒪᖅᖃᑦᑏ

ᐋᓐᓂᐊᒍᓐᓃᑕᐅᒥᓂᐊᖅᒪᑕ ᓇᖑᐊᓇᔦᑦ ᐊᓱᖏᑦᑐ ᑎᒥᐅᑉ ᐋᓐᓂᐊᖏᑦ, ᐆᓇᖅᓱᓱᒪᔦᖅ ᐅᔭᖅᖅ ᓱᐅᖅᑑᓃᑦ (ᐃᒧᓱᒪ ᑐᓂ ᖅᑲᑦᑐᓈᖅᑕᒧᑦ) ᐊᑐᖅᑕᐅᓲᖅ «ᐆᓇᖅᑐᖅᑯᑎᑎᑐᑦ». ᒥᖑᐊᕈᑎᓕᐅᓲᒍᒻᒥᔦᑦ ᒪᒣᑦᑐᖅᑯᑎᒥᑦ ᐅᐊᕈᑎᖅᑲᖅᑎᑐᒍ ᓇ ᑦᓱᐅᑉ ᐅᖅᓱᖓᓂᒃ ᒥᖑᐊᕈᑎᕆᑦᓱᒍᓗ ᐋᓐᓂᐊᔦᒥᒃ, ᐅ_ᕙᑑᓐᓃᑦ ᐸᓂᐅᑉᐹᓱᒪᔦᖅ ᓇᑦᓱᐅᑉ ᐅᖅᓱᖓ ᒥᖑᐊᕈᑕᐅᓲ ᒍᑦᓱᓂ ᐋᓐᓂᐊᔦᖅ ᐋᓱᒌᑐᐊᖅᒪᑦ ᖅᑲᑐᖅᖃᐅᑎᑦᑐᐊᒥᒃ. ᖅᑮᖅᓱᑐᒥᒃ ᑲᒪᓂᖅ ᐊᑦᓴᓚᑖᑐᐃᓐᓇᖅ ᐃᒫᑲᓵᑦᑐᕕᓂᖅᒥᒃ ᑲ ᒪᓂᖅᒥᑦ. ᖅᑮᖅᓱᑐᖅᑲᑕᑐᐊᖅᐸᑦ ᖅᑲᓂᐅᑉ ᖅᑲᐳᖓ ᐊᑦᑐᑕᐅᒋᐊᖅᑲᓐᖑᕆᑐᖅ. ᖅᑭᔦᒃ ᑭᒻᒥᐊᔭᐅᑎᑕᐅᓲᖅ ᖅᑮᖅᓱᑐᖅ ᐅᖅᑲ ᖅᒥᓂᒃ ᑮᓱᓂᐊᖏᒪᑦ ᓄᑦᑕᑕᐅᒥᑐᓂᑐ. ᑭᖑᓂᐊᒍᑦ ᖅᑮᖅᓱᑐᕕᓂᖅ ᓂᓇᒋᐊᓚᒃ ᐃᑐᐃᑦᑐᒥᒃ ᑑᑦᑕᒥᒃ ᖅᑲᖅᓴᐅᒥ ᑦᓲᓃᑦ (ᑎᖅᑎᓱᒪᔦᒥᒃ ᐁᐸᔦᒥᑦᓲᓃᑦ), ᓂᓇᖅᖅᑳᑐᒍ ᓱᖑᖅᑲᐅᑎᖑ. ᓂᐊᖅᑯᖑᔦᖅᑲᖅᐸᑦ ᓂᐊᖅᑯᖑᒪᓇᐅᖏᑐᒥ ᒃ, ᖅᑲᑦᑐᓈᖅᑕᖅ ᖅᑭᓚᑦᑕᐅᒍᓐᓇᑐᖅ ᓂᐊᖅᑯᖅᒧᑦ (ᓱᑲᖑᑐᐊᕈᓐᓃᑎᑐᒍ). ᓂᐊᖅᑯᖑᒪᓇᑐᐊᖅᐸᑦ, ᓂᐊᖅᑯᖅ ᓂᓚᓚᒻ ᒧᑦ ᐃᒫᓄᖅᑕᐅᓲᖅ. ᓂᐊᖅᑯᖑᒪᓇᐊᑐᑦᓴᑐᐊᖅᐸᑦ, ᑕᑯᓇᑕᖏᐊᑦᑖᑦ ᐃᓱᐃᑦᑑᑎᑦᑐᑦ, ᓱᓂᒋᐊᑕᒃ ᐊᑭᑎᒥ ᖅᑭᔦᑦᑕ

Boreal Light Italic

Architecture

Repurposing

Gregory Bateson

Theory Environment

National Academy Press

Container Deposit Legislation

Environmental Impact Assessment Scrap

RUSSELL L. ACKOFF SYSTEM Thermodynamics Adaptability

ECO-INDUSTRIAL PARK BINS Psychology Infrared Radiation

INFRASTRUCTURAL CAPITAL Svante Arrhenius Salt Content

CORNELL UNIVERSITY PROBABILITY Land Recycling Input-Output Analysis

NATURAL RESOURCE IRREVERSIBLE Industrial Revolution Claude Shannon

SYSTEMIC CHANGE RESISTANCE ICE Protected Species Indigenous Peoples

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MATERIALS

PRINCIPLES

SWOT ANALYSIS

GREEN CHEMISTRY

RECURSIVE RECYCLING

TECHNOLOGY ASSESSMENT

UN MILLENNIUM DECLARATION (2000)

WATER PROTECTED SPECIES Environmentally Friendly Tires

GROSS DOMESTIC PRODUCT Landscape Products Humidity

RADIATIVE TRANSFER CRISIS Ozone Depletion Stewardship

CLIMATE SYSTEM ASSEMBLY RULES Industrial Symbiosis Timeline Sensory

PLANTING DESIGN STATELESSNESS Batteries Sustainability Measurement

ABSOLUTE TEMPERATURE FORMAL U.S. Environmental Protection Agency

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As the whole product's life cycle should be reg arded in an integrated perspective, representat ives from advance development, design, produ ction, marketing, purchasing, and project man agement should work together on the Ecodesi gn of a further developed or new product. Toge ther, they have the best chance to predict the h olistic effects of changes of the product and th eir environmental impact. An eco-design produ ct has a cradle-to-cradle life cycle ensuring ze ro waste is created in the whole process. By mi

Waste (hazardous waste and other waste defined in environmental leg islation) is only an intermediate step and the final emissions to the env ironment (e.g. methane and leaching from landfills) are inventoried. All consumables, materials and parts used in the life cycle phases are acc ounted for, and all indirect environmental aspects linked to their produ ction. The environmental aspects of the phases of the life cycle are eva luated according to their environmental impact on the basis of a numb er of parameters, such as extent of environmental impact, potential for improvement, or potential of change. According to this ranking the rec

Ecodesign concepts currently have a great influence on many aspects of design; the impact of global warming and an increase in CO_2 emissions have led companies to consider a more envir onmentally conscious approach to their design thinking and process. In building design and co nstruction, designers are taking on the concept of Ecodesign throughout the design process, fr om the choice of materials to the type of energy that is being consumed and the disposal of w aste. With respect to these concepts, online platforms dealing in only Ecodesign products are e merging, with the additional sustainable purpose of eliminating all unnecessary distribution st eps between the designer and the final customer. EcoMaterials, such as the use of local raw m aterials, are less costly and reduce the environmental costs of shipping, fuel consumption, and

Boreal Light Italic

ᓯᐅᓯᕆᐅᑎᓕᐅᕐᐸᑐᕕᓃᑦ ᐁᐸᔪᒥᕐ, ᑎᕐᑎᓯᒪᔪᒥᑦ ᐃᒍᓇᕐᒥᓗᓐ ᓃᑦ ᓇᑦᓯᐅᒃ ᐅᕐᓯᖕᒐᓂᒃ, ᐊᒻᒪᓗ ᑯᓯᒍᑎᓕᐅᕐᐸᓯᑎᒃ ᖁᐸ ᓄᐊᑉ ᓯᓗᖕᒐᑕ ᐃᓯᖕᒐᓂᒃ ᓄᕝᕕᓴᕐᓯᒪᔪᒥᒃ. ᑖᓐᓇ ᐅᕐᑲᕐᑕᐅ ᒪᔪᕐᒃ ᓰᖕᒍᓂᕐᓴᐅᕆᐊᖕᒐ «ᐅᓪᓗᒥᓂᑕᕐᒥᑦ» ᓯᐅᓯᕆᒍᓯᕐᒥᒃ, ᑭᓯᐊᓂ ᐃᑉᐱᒋᔭᐅᑦᓯᐊᒪᕆᒋᐊᓕᒃ ᒐᒣᑑᕐᑐᒧᑦ. ᐊᑕᐅᓯᕐᒃ ᐊ ᕐᓇᕐᒃ ᐅᕙᑦᑎᓂᒃ ᐅᕐᑲᐅᑏᓯᒪᔪᕐᒃ ᐃᒫᒃ: «ᐊᑕᐅᓯᕕᑦᓯᖕᒐ ᐅ ᕐᓯᒥᒃ ᑯᕝᕕᕆᓕᐅᕐᓯᒪᔪᖕᒐ ᓯᐅᓯᕆᔭᐅᔪᒧᕐ, ᒐᒣᓕᑐᐊᕐᓴᒪᑐ ᕐᑯᐱᕐᑭᒃ ᓯᐅᑎᒥᑦ ᐊᓂᑦᓯᓂ – ᕐᑯᐊᕐᓵᑐᑐᓕᐅᕐᓯᒪᔪᖕᒐ!» ᐃᒡᒋᐊᓕᕆᔪᕐᒃ ᐃᑯᓪᓕᐅᒥᓂᐊᕐᒪᑦ ᓂᕆᒋᐊᓕᒃ ᑭᒻᒥᓇᕐᓂᒃ (ᒐᒣᓕᓐᖕᒑᕐᒃ ᑎᕐᑎᓯᒪᔪᓂᓪᓘᓃᑦ), ᕐᑲᓂᕐᒥᓂᒃ ᐃᕐᑭᐃᓗᓂ ᑕᕆᐅᕐᒧᑦ ᐃᒪᕐᒧᕐ, ᐅᕝᕙᓘᓐᓃᑦ ᑕᒧᐊᑐᓂ ᐅᑦᔪᕕᓂᐅᑉ ᐅᕐᓯ

ᑕᓕᕆᔭᕐᒃ ᓂᐅᒋᔭᕐᑑᓃᑦ ᓇᐱᑐᐊᕐᒪᕐ, ᓄᑦᓯᑕᐅᓰᕐᒃ ᓴᐅᓂᖕᒐ ᐃᓂᖕᒐᓅᕆᐊᕐᓯᒍ ᒥᑭᔫᓐᓂ ᓗ ᓵᑦᑐᔭᓂᒃ ᕐᑭᔫᓐᓂᒃ ᕐᑭᓗᕕᒋᑦᓯᒍ ᓇᐱᒪᔪᕐᒃ ᑕᕝᕙᓂᑦᓴᓅᓂᐊᕐᒪᑦ. ᑐᓕᒫᕆᔭᕐᒃ ᓯᕐᑯᒥ ᓯᒪᑐᐊᕐᒪᕐ, ᐃᓅᑉ ᑎᒥᓕᒫᖕᒐ ᓂᒥᕐᓯᒪᑎᑕᐅᔫᕐᒃ ᓯᑲᖕᒐᔪᒥᒃ ᐆᒪᔪᕕᓂᐅᑉ ᒪᒥᖕᒐᓂᒃ, ᐊᒻ ᒪᑐᑦᑕᐅᕐᒃ ᑯᓴᐱᒋᓴᕐᒃ ᓯᕐᑯᒥᓯᒪᑉᐸᕐ, ᐃᓄᒃ ᓇᕐᕐᓕᖕᒉᓐᓇᕆᐊᓕᒃ ᒪᓂᕐᕐᒥ. ᓴᐅᓃᑦ ᐃᓂᒥ ᓃᓐᖕᒋᑐᑦ ᓄᑦᓯᑕᐅᑦᓯᑎᒃ ᐃᓂᖕᒋᓐᓅᑕᐅᓰᑦ. ᐃᒣᓵᕆᐊᑖᓕᔪᕐᑕᕐᑲᓐᖕᒋᑐᕐᒃ ᑭᓯᐊᓂ ᕐᑲᓄᕐᒃ ᐊᕐᕐᑯᓇᕐᓂᕕᓂᖕᒐ ᑕᑯᓐᓇᑕᐅᓰᕐᒃ, ᐱᔭᕆᐊᑭᑦᑑᔭᕐᓂᑐ ᓇᐱᓯᒪᔪᓕᕆᓂᕐᒃ. ᐊᕐᕐᑯᓇᕐᑐᕕᓂᕐᒃ ᓄᓪᓕᖕᒐᑦᓯᐊᕆᐊᓕᒃ ᓄᑭᖕᒋᑦ ᐊᕐᓯᑮᓯᖕᒐᑐᐊᑭᑎᒃ ᐊᕝᕕᐊᑐᐃᓐᓇᕆᐊᕐᑲᕐᒪᑕ ᓴᐅᓂᕐᒥᒃ ᓇ ᐱᒪᕐᒥᒃ. ᐊᑕᐅᓯᕐᒃ ᐊᖕᒍᑎᒃ ᐅᕙᑦᑎᓂᒃ ᐅᕐᑲᐅᑏᓯᒪᔪᕐᒃ ᐃᒫᒃ: «ᓰᕐᕐᑯᑯᑦ ᐱᓪᓗᐃᓯᒪᑐᐊᑭ ᕕᕐ, ᐋᓐᓂᓇᕐᑐᔪᐊᕐᒃ ᐅᕐᑳᕕᐅᒐᓯᒋᐊᒥᓪᓘᓃᑦ ᐃᓅᒻᒥᔪᒧᑦ.» ᑎᓪᓘᔭᒻᒪᕆᑦᑐᕐᑲᕐᐸᑦ ᐱᓪᓗᐃᓯ

ᑭᒍᑎᒃ ᐋᓐᓂᐊᕈᓐᓃᓕᐅᒥᓂᐊᕐᒪᕐ, ᕐᑭᒻᒥᖕᒍᐊᕐᒃ (ᓇᐹᕐᑐᒥᐅᔭᕐᒃ) (ᒥᑭᔫᑐᓂ ᓄᑖᒍᑐᓂᑐ) ᐅᕝᕙᓘᓐᓃᑦ ᐊᒥᒐᔭᕐᓯᒪᔪᕐᒃ ᐊ ᒫᓕᓐᓅᑉ ᐊᒫᖕᒐ ᑭᒻᒥᐊᑕᐅᔫᕐᒃ ᑭᒍᑎᐅᑉ ᐋᓐᓂᐊᔫᑉ ᓇᑖᓃᑦᑎᑐᒍ. ᒐᒣᒍᓂ ᐃᑉᐱᒍᓯᒍᓐᓃᒐᔭᕐᑐᕐᒃ ᐋᓐᓂᐊᒥᓂᒃ ᒥᑐᑦᑕ ᐅᑐᓂᑐ ᒪᕐᑭᖕᒐ. ᐊᒻᒪᓗᑦᑕᐅᕐᒃ, ᒪᒣᑦᑐᕐᑯᑏᑦ ᐅᕐᑲᐅᔭᖕᒋᑦ ᑕᒧᐊᔭᐅᒍᓐᓇᓯᑎᒃ, ᐅᕝᕙᓘᓐᓃᑦ ᐁᐸᔪᕐᒃ ᓇᑦᓯᐅᒃ ᐅᕐᓯᖕᒐ ᑭ ᒍᑎᒧᑦ ᐋᓐᓂᐊᔪᒨᕐᑕᐅᔫᕐᒃ. ᐸᓕᖕᒐᔪᒥᒃ ᑭᒍᒐᕐᓯᓂᐊᕈᓂ, ᑐᒃᑐᕕᓂᐅᑉ ᓄᑭᖕᒐ ᕐᑭᓕᑦᑕᐅᔫᕐᒃ ᑭᒍᑎᒧᑦ ᐊᒧᔭᐅᓕᖕᒐᔪᒧᑦ. ᑭᓯᐊᓂ ᐊᑕᐅᓯᕐᒃ ᐊᖕᒍᑎᒃ ᐅᕐᑲᕐᓯᒪᔪᕐᒃ ᐃᒫᒃ: «ᐅᓪᓗᒥᐅᓕᕐᑐᕐᒃ ᓰᕐᓇᑐᕐᑲᑐᐊᓕᕐᒪᑦ ᒪᒪᕐᓴᐅᑎᓕᓐᓂᒃ/ᐱᑕᑦᓴᓕᓐᓂᒃ, ᑭᒍᑏᑦ ᐃᒻᒥᓂᕐᑭᑦᓯᑎᒃ ᐲᑐᐃᓐᓇᐸᓕᕐᑐᑦ ᓄᑦᓯᑕᐅᒐᓯᐊᕐᑎᒃ». ᕗᓪᓗᓂᕐᒃ «ᕐᑲᒻᒥᓂᑕᒐᓕᐅᒐᓗᐊᕐᑎᑐᒍ» ᐃᓄᓐᓄᕐ, ᐃᓕ ᖕᒋᑦ ᐋᕐᕐᑮᒐᓯᐊᕈᓰᑦ ᐱᕙᓪᓕᐊᔭᐅᓯᒪᓕᕐᑐᑦ. ᐊᐅᒻᒥᒃ ᐅᕆᐊᕐᑲᑦᑕᕈᓐᓃᓂᐊᕐᒥ, ᐃᓄᒃ ᐃᒥᕆᐊᓕᒃ ᓇᑦᓯᐅᑉ ᐊᐅᖕᒐᓂᒃ ᑐ ᕐᑯᑕᐅᕐᑕᑖᒥᕐ, ᐅᕝᕙᓘᓐᓃᑦ ᐃᒥᕐᑐᓂ ᐅᔭᕐᕐᒦᓯᓂᒃ ᓄᓇᔭᓂᒃ ᒪᒣᑦᑐᕐᑯᑎᒥᓪᓘᓃᑦ, ᐸᐅᕐᖕᒎᒪᑐᓂᓘᓐᓃᑦ. ᕗᓪᓗᑐᒃ ᐋᕐ ᕐᑭᑕᐅᒐᓯᐊᓕᖕᒐᒍᒍᓂ, ᓂᕆᒋᐊᓕᒃ ᐁᐸᔪᒥᒃ ᑑᑦᓕᕕᓂᕐᒥᒃ ᕐᑲᕐᓴᐅᕕᓂᕐᒥᓘᓐᓃᑦ, ᓇᑲᔪᖕᒐ ᓂᕆᕐᑲᑐᒍ. ᕗᓪᓗᑐᒃ ᐊᓂᕐ

Boreal Regular

Biosecurity Information

Chinese Garden

Sustainable Design

Ludwig Von Bertalanffy

One Or Two Thousand Years

Standards And Certification Residence

SYSTEMS SCIENCE PORTAL El Niño Southern Oscillation

ANTHONY STAFFORD BEER Precautionary Principle Sres

LANDFILLS GAS HYDRATES Kenneth E. Boulding Writing

TROPOSPHERIC URBAN ECOLOGY Relative Nonlinearity Infrastructure

CARBON DIOXIDE EMISSIONS G77 Universal Adaptive Strategy Theory

RECYCLING (ECOLOGICAL) SOCIAL History Of Industrial Ecology Paper

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HIGHWAYS

BLUE BAGS

SOCIOLOGICAL

KYOTO PROTOCOL

CORNELL UNIVERSITY

TOTAL SOLAR IRRADIANCE

COST BENEFIT ANALYSIS DEPLETION

ENERGY EFFICIENCY PAINT Sensory Recursive Recycling

LANDSCAPE ENGINEERING Low-Carbon Energy Infrared

EDWARD NORTON LORENZ International Style Droughts

INFRASTRUCTURAL CAPITAL CFCS Universal Adaptive Strategy Theory

GREEN ROOFS CONCENTRATIONS National Academy Of Sciences Gfdl

INDUSTRIAL SYMBIOSIS TIMELINE Environmental Economics Radiates

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Environmental graphic design (EGD or Exper iential Graphic Design) is a design profession embracing many design disciplines including graphic design, architecture, industrial desig n and landscape architecture. Practitioners i n this field are concerned with the visual asp ects of wayfinding, communicating identity a nd brands, information design, and shaping a sense of place. The word environmental refer s to graphic design as part of creating the bu ilt environment, not to the natural environme

Because of the confusion between the two, the field is now becom ing known as “Experiential Graphic Design”. Some examples of wo rk produced by experiential graphic designers include the design a nd planning of sign programs, wayfinding consulting, exhibit and i nterpretive design, entertainment environments, retail design, info rmation and map design, as well as memorial and donor recognitio n programs. The field developed from origins in signage and brand ing and requires practitioners to be familiar with communication a nd information design as well as relevant materials, processes and

For the period before 1800, the history of landscape gardening (later called landscape ar chitecture) is largely that of master planning and garden design for manor houses, palac es and royal properties, religious complexes, and centers of government. An example is t he extensive work by André Le Nôtre at Vaux-le-Vicomte for King Louis XIV of France at t he Palace of Versailles. The first person to write of making a landscape was Joseph Addis on in 1712. The term landscape architecture was invented by Gilbert Laing Meason in 182 8, and John Claudius Loudon (1783–1843) was instrumental in the adoption of the term l andscape architecture by the modern profession. He took up the term from Meason and gave it publicity in his Encyclopedias and in his 1840 book on the Landscape Gardening

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ᖅᑭᖕᒐᒃᑯᑦ ᐊᐅᓈᕈᓐᓂᑎᑦᓯᒐᓱᐊᖅᑐᖅᑲᓚᑐᐊᖅᒪᑦ, ᐃᑉᐱᒋᔭᐅ
ᓗᐊᓐᖑᐊᓰᒃ ᒪᖅᕉᒃ ᑎᒥᒦᑦᑑᒃ. ᓯᕗᓪᓚᖅ ᑐᓄᓯᒃ. ᓂᓚᒃ,
ᐊᐳᑎᒃ, ᐅᔭᖁᖅ ᐅ_ᕙᓘᓐᓃᑦ ᑏᑦ ᖅᑲᐅᓯᐅᑦᓯᑎᒃ ᐴᖅᓯᒪᔪ
ᑦ ᑐᓄᓯᒻᒨᑕᐅᒍᓐᓇᑐᑦ. ᑐᓄᓯᑭᔭᐅᔪᖅ ᒥᓪᓗᐊᑕᐅᒍᓐᓇᒥᔪ
ᖅ ᐃᓅᒻᒥᔪᒧᑦ. ᑐᖕᒐᓚᐊ ᐱᒻᒪᙳᖅᑯᑎᑭᔭᐅᑦᓯᓂ ᐊᒡᒐᐅᑉ
ᐃᓄᒡᖏᑦ, ᑳᒃᑯᐊ ᐃᓄᒋᑦ ᖅᑭᓚᑦᑕᐅᒪᓗᑎᒃ ᑐᖕᒐᓚᐊ ᒥ
ᖏᑎᒃ ᖅᑯᒻᒧᑦ ᑎᒃᑯᖕᒐᑎᓪᓗᒍ. ᐃᓚᖏᑦ ᐃᓄᐃᑦ ᖅᑭᓗᓰ
ᑦ ᒥᑭᓚᖁᖕᒐᓂᒃ ᑕᓚᖅᐱᐊᓃᑦᑐᒥᒃ ᖅᑭᖕᒐᖕᒐᑕ ᑕᓚᖅᐱᐊ
ᐊᐅᓈᑦᑐᐊᖅᒪᑦ, ᐊᒻᒪᓗ ᒥᑭᓚᖁᖕᒐᓂᒃ ᓴᐅᒥᐊᓂᒃ ᖅᑭᖕᒐ
ᖕᒐᑕ ᓴᐅᒥᐅ ᐊᐅᓈᑐᐊᖅᒪᑦ. ᐃᓚᖏᑦ ᐅᒪᓐᖓᑦ ᖅᑭᓗᓰᑦ
ᒥᑭᓚᖁᖕᒐᓂᒃ ᓴᐅᒥᐊᓃᑦᑐᒥᒃ ᐃᓚᖏᓪᓗᑕᐅᖅ ᖅᑭᓗᓰᒍ

ᐊᐅᓈᕈᓐᓂᑎᑦᓯᒍᓯᐅᒻᒥᔪᖅ ᐃᓄᒃ ᐅᖅᖃᓯᐅᕈᓐᓂᑎᓪᓗᒍ. ᐅᑭᐅᒥ, ᐊᐳᑎᒃ ᐊᐅᓈᖅᑑᑉ
ᖅᑲᓂᖕᒐᑕ ᖅᑭᓚᖕᒐᓅᖅᑕᐅᓰᖅ ᑮᓇᓚᒫᖕᒐᓗ ᐊᐳᑎᒥᑎᖅᓯᒍ. ᐅᐱᖅᖕᖔᒥ/ᐊᐅᔭᒥ, ᐊᐅᓈᖅ
ᑐᖅ ᐃᒥᓰᖅ ᓯᓇᑐᐃᓐᓇᒥᒃ ᓂᓪᓚᒪᔪᒥᒃ ᐃᓗᔭᐅᒪᑦᓯᓂᓗ ᐊᖏᔪᖅᓚᓄᑦ ᓂᓪᓚᒪᔩᑦ
ᓯᑎᒃ ᐅᔭᖁᖅᓄᑦ (ᓴᖅᓚᐊᓯᒋᑦ, ᓴᓂᖁᖕᒐᓃᑦᑎᓯᒋᑦ, ᐊᓯᐊᓂᓗ). ᖅᑯᐃᑐᐊᖁᒥ ᐊᐅᓈᕈᓐᓂ
ᕈᓐᓇᒥᔪᖅ. ᐃᒥᖅᓂᖅ ᑕᒧᐊᓂᓪᓗᓐᓃᑦ (ᒪᒉᑦᑐᖅᑯᑎᒥᒃ, ᐸᐅᓐᖑᖅᑯᑎᒥᒃ ᖅᑭᓯᖅᑐᑕᐅᔭᖅᒥ
ᓗᓐᓃᑦ) ᓄᒃᑮᓚᐅᒥᒍᓐᓇᑐᖅ ᐃᓄᒻᒥᒃ ᐊᐅᓈᖅᑐᕕᓂᖅᔭᐊᖕᒍᑐᐊᖅᒪᑦ. ᓇᓐᖑᒍᓗᑐᐃᓐᓇ
ᓚᑐᐊᖁᒥᒃ ᐃᓄᐃᑦ ᐊᒥᓯᑦ ᐃᑐᓰᑦ. ᐋᓐᓂᐊᓯᐅᑎᒋᔭᐅᒍᓐᓇᑐᑦ ᐃᓚᐊᓇᔭᐅᑦᓯᑎᒃ ᒪᒉᑦ
ᑐᖅᑯᐃᑦ (ᐅᖅᑲᐅᔭᖕᒋᑦ ᑕᒧᐊᔭᐅᒍᓐᓇᑐᑦ ᑎᖅᑎᑎᑕᐅᓗᑎᔫᓐᓃᑦ), ᐸᐅᓐᓇᖅ, ᐊᖅᐱᖅᑯᑎ
ᒃ, ᑲᓪᓚᖅᑯᑎᔫᓐᓃᑦ. ᑕᒧᐊᓂᖅ ᑐᓪᓚᐅᑉ ᐃᖅᖁᕕᖕᒋᓐᓂᖅ ᐸᓂᖅᑐᓂᖅ ᐃᑲᔪᖅᓯᒍᓐᓇᒥ

ᑏᖅᓗᒃ, ᒪᒉᑦᑐᖅᑯᑎᒃ ᖅᑭᓯᖅᑐᑕᐅᔭᖅᔫᓐᓃᑦ ᐱᐅᔩᒻᒥᔩᒃ ᓇᑲᓯᓚᓇᔪᓄᑦ. ᐊᓯᐊᓂᒃ ᑏᓚᐅᕈᓐᓇᒥᔪᑦ ᒥᖅᖁᐃᔭᖅᓂᖁᕕᓂ
ᖅᓂᒃ (ᐅᑭᐅᒥ) ᑐᒃᑐᕕᓂᐅᑉ ᓇᖅᔪᖕᒐᓂᑦ ᐁᕕᕕᓂᐅᓪᓗᓐᓃᑦ ᑑᓛᖕᒐᓂᒃ. ᓇᑲᓯᓚᓇᒻᒪᓇᑐᐊᖅᐸᑦ ᐃᓄᒃ ᖁᐃᒍᓐᓇᖕᒋᖅ
ᓯᓂ, ᑐᒃᑐᕕᓂᐅᑉ ᓄᑭᖕᒐ ᖅᑭᒥᖅᓗᖕᒐᓃᑦᑐᕕᓂᖅ ᐊᒥᑦᑑᑲᓚᐊᓇᔭᐅᓗᓂ ᒥᑭᓚᓂᐊᖅᒪᑦ ᑕᑭᓚᓗᓂ ᓯᑎᓚᓗᓂᓗ, ᐅ
ᖅᓯᑎᖅᓗᒍ ᓇᑦᓯᐅᑉ ᐅᖅᓯᖕᒐᓂᒃ, ᑯᐃᕕᒧᑦ ᑐᖅᑯᑕᐅᒍᓐᓇᒥᔩᑦ ᓇᑲᓯᒻᒧᑦ ᑎᑭᐅᑎᖁᑕᖅᑎᓗᒍ. ᑕᒪᓐᓇ ᐊᑐᖅᑕᐅᒍ
ᓐᓇᑐᖅ ᐊᖑᑎᓄᑦ ᐊᖅᓇᓄᓪᓗ, ᐋᓐᓂᓇᖅᑐᐊᔫᒐᓂᓗ ᑑᓵᑦᓯᒍ ᐋᓐᓂᓇᕈᓇᐅᒐᓗᐊᖅ. ᐊᒻᒪᓗᑦᑕᐅᖅ, ᐆᓇᖅᑐᖅ ᐅ
ᔭᖁᖅ ᓯᐅᖁᖅᔫᓐᓃᑦ ᒥᖑᐊᓇᒍᑕᐅᒍᓐᓇᒥᔩᖅ ᓇᑲᓯᒋᔭᒥᒃ. ᐊᓇᕈᓐᓇᖏᐅᒪᔩᖅᑲᖅᐸᑦ, ᐃᒍᓇᐅᓚᖅᑐᖅ ᐃᖅᑲᓗᐸᒃ ᓂ
ᓇᔭᐅᓰᖅ (ᐁᐸᔩᓗᓂ ᑎᖅᑎᓯᒪᓗᓂᔫᓐᓃᑦ), ᐅ_ᕙᔫᓐᓃᑦ ᒥᑭᔦᐊᐱᒃ ᑐᒃᑑᑉ ᑐᓐᓄᖕ ᖅᑭᓐᓂᐊᖕᒐᑦᓯᓂ ᐃᑎᖅᔫᑕᐅᓰ
ᖅ. ᐊᓇᑭᑕᖅᑐᒧᑦ ᒪᓚᒃᓯᐊᒋᑦ ᐅᖅᑲᐅᔭᖕᒋᑦ ᐅᒣᓚᓐᖕᒎᖅ ᓂᓇᔭᐅᓰᑦ. ᐅᖅᑲᖅᓯᒪᔩᖅᑲᖅᑐᖅ, «ᐃᓄᔫᖅ ᐃᒫᓃᑦᑐᕕᓂᐅ
ᒍᓂ ᐃᑲᐅᖅᓂᓚᒦᒥ ᓯᕕᑭᓐᓂᓴᒥᓪᓗᓐᓃᑦ ᐆᒪᑎᑕᐅᒋᐊᓪᓚᒍᓐᓇᕕᓚᒃ». ᖅᑲᐳᖅ ᐃᒫᑲᓴᑦᑐᕕᓂᐅᑉ ᖅᑲᓂᖕᒐᓃᑦᑐᖅ

Boreal Italic

Multi-Agent Refrigerants

Gaia Hypothesis

Bateman's Principle

Design For Environment

Solar Radiation Management

Architectural Association Climate Action

PRECAUTIONARY PRINCIPLE Asphalt Cost–Benefit Analysis

SUSTAINABILITY REPORTING Food Production Ecolabelling

ABRUPTLY ROBERT FROSCH Full Cost Accounting Volcanic

DEMATERIALIZATION (ECONOMICS) Urban Reforestation Invasive Species

HEAT CAPACITY SYSTEMS ECOLOGY Sustainability Advertising Agriculture

ENVIRONMENTAL ECONOMICS CITY Switzerland Charles Morris Anderson

Boreal Italic

LANDFILLS

PLANETARY

CROP FAILURES

TALCOTT PARSONS

COPENHAGEN ACCORD

URBAN DRAINAGE SYSTEMS

KALUNDBORG ECO-INDUSTRIAL PARK

TECHNOLOGY ASSESSMENT Forestry Ecological Footprint

THERMAL INERTIA RECYCLE Abruptly Instructional Capital

CONSERVATION NONLINEAR Tuvalu Helix Of Sustainability

INFRARED RADIATION ENERGETICS Input-Output Analysis Undernutrition

RECYCLED ENERGY CONSERVATION Greenland Ice Sheet Arctic Shrinkage

SOLAR LUMINOSITY CLEAN AIR ACT Sustainable Architecture End-Of-Life

Boreal Italic

According to Jonathan Chapman of the Unive rsity of Brighton, UK, emotionally durable des ign reduces the consumption and waste of nat ural resources by increasing the resilience of r elationships established between consumers a nd products.” Essentially, product replacemen t is delayed by strong emotioal ties. In his boo k, Emotionally Durable Design: Objects, Exper iences & Empathy, Chapman describes how “t he process of consumption is, and has always been, motivated by complex emotional drivers

Creative designers and artists are perhaps the most inventive when i t comes to upcycling or creating new products from old waste. A grow ing number of designers upcycle waste materials such as car window glass and recycled ceramics, textile offcuts from upholstery companie s, and even decommissioned fire hose to make belts and bags. Whilst accessories may seem trivial when pitted against green scientific brea kthroughs; the ability of fashion and retail to influence and inspire co nsumer behaviour should not be underestimated. Eco design may also use bi-products of industry, reducing the amount of waste being dum

Sustainable architecture is the design of sustainable buildings. Sustainable architecture atte mpts to reduce the collective environmental impacts during the production of building comp onents, during the construction process, as well as during the lifecycle of the building (heatin g, electricity use, carpet cleaning etc.) This design practice emphasizes efficiency of heating a nd cooling systems; alternative energy sources such as solar hot water, appropriate building siting, reused or recycled building materials; on-site power generation - solar technology, gro und source heat pumps, wind power; rainwater harvesting for gardening, washing and aquif er recharge; and on-site waste management such as green roofs that filter and control storm water runoff. This requires close cooperation of the design team, the architects, the engineers

Boreal Italic

ᖃᐳᒃ ᓅᐃᑐᐊᕐᐸᑦ, ᐃᓅᓚᖕᒐᓂᖕᒐ ᖃᐆᔾᔭᖅ, ᑭᓯᐊᓂ ᑭ
ᓇᓘᓐᓃᑦ ᖃᐳᐃᔪᕆᐊᖃᓐᖕᕆᑐᖅ. ᖃᐳᒃ ᑭᓐᖕᒎᒪᓇᓚᖕᒐᒻᒪ
ᑦ ᓯᕗᓪᓚᐹᑦᓯᐊᒥᒃ ᐊᓂᕐᑎᓇᕚᓐᖕᒐᕆᐊᓐᖕᒐᓯᑉᐸᑦ, ᐃᒻᒥᓃ
ᓐᓇᓗ ᐊᓯᐅᓲᒍᑦᓱᓂ. ᑕᒪᓐᓇ ᐱᒻᒪᓇᐊᓗᒃ. ᐅᖃᕐᓯᒪᔪᖃᕐᑐ
ᖅ «ᑭᓇᑐᐃᓐᓇᖅ ᐃᓖᑲᓴᑐᐊᕐᐸᑦ, ᐃᓖᑲᓵᑦᑑᑉ ᐃᓚᓪᓗᑐᖕᕆ
ᑦ ᑲᒪᕆᐊᖃᓐᖕᕆᑐᑦ ᐅᐸᓗᓯᑐᐃᓐᓇᓇᐊᖃᕐᒪᑕ ᐊᓪᓚᑎᓇᓗ
ᑎᓗ ᖃᐳᒥᒃ. ᑲᒪᔭᑦ ᐃᓖᑲᓵᑦᑐᕕᓂᕐᒥᒃ ᓅᓪᓚᖕᒐᑦᓯᐊᓇᐊᓛ
ᑦ ᐃᓂᕐᑑᒪᒍᓐᓄᓗᑎᓗ.» ᐃᓖᑲᓵᑦᑐᕕᓂᖅ ᐃᓖᓃᒍᓐᓄᑎᑕ
ᐅᕇᑐᐊᕋᒥ, ᐊᑦᑕᓇᒻᒪᓇᑦᓱᒍ ᖃᑦᓯᓂᕐᒎᑕᐅᓲᖅ ᐃᒪᖅ ᐊᓂ
ᐅᕐᖃᓂᐊᕐᒪᑦ, ᑲᒪᕆᔭᐅᕆᐊᖃᓐᖕᕆᑐᖅ ᒐᒣᓚᖕᒐᑎᓪᓗᒍ. ᐅ
ᖄᔦᖃᓇᐊᖃᓐᖕᕆᑐᕐᓘᓃᑦ ᐃᓖᑲᓵᑦᑐᕕᓂᐅᑉ ᑐᕐᑯᖕᒐᐅᓵᑦᑑ

*ᐃᓄᐃᑦ ᐃᓪᓗᓗᐊᓐᖑᐊᓖᑦ ᐅᐱᕐᖕᒐᕋᑖᕐᑎᓗᒍ. ᐃᓪᓗᒐᓚᒪᐅᑎᑦᓯᐊᖅ, ᐊᑯᓂ ᐊᓃᕐᑐᕕᓂ
ᐅᔦᖃᕈᓂ, ᐃᓘᒃ ᐅᓛᓗᕆᒃ ᐊᐳᑎᒧᑦ ᓄᓛᒧᑦ ᓄᓚᒻᒧᔫᓐᓃᑦ ᐃᓪᓗᒧᑦ ᐅᖅᑰᔦᒧᑦ ᐃᑎᓇ
ᐊᓚᐊᕋᓂ. ᐅᒣᑐᐊᕈᓂ ᐃᓱᒦᑦᑐᒥᒃ ᑕᓇᐅᕐᒥᒃ ᐹᔪᔦᖅ. ᐃᓪᓗᓯᔦᖃᑐᐊᕈᓂ ᐃᓱᒥᓂᒃ ᐊᑦᑑ
ᐱᓴᑦᐅᓚᑦᓯᐊᓇᐊᓚᒃ ᑯᒥᒍᓐᓄᓗᓂ ᐃᓱᕆᒃ ᓯᒃᑯᓴᕈᐊᕐᒪᑎᒃ ᐋᕐᕐᑭᓂᐊᕈᓐᓄᓗᑎᒃ. ᐃᓪᓗ
ᒪᓇᑦᑐᖃᑐᐊᕐᒪᑦ ᐃᓴᕈᓚᕆᓵᒃ ᖃᑯᕐᑕᑖᓰᒃ. ᐊᒥᓰᓐᖕᕆᑑᒐᓗᐊᑦ ᐃᓪᓗᓂᐅᑎᕆᓴᐅᒍᓇᑐᐃᑦ:
ᐊᑐᕐᓯᒪᔦᑦ ᐲᑐᐃᓐᓄᑦ ᐅᓛᓘᓐᓃᑦ ᐁᐸᔦᖅ ᐊᕐᑭᐅᕆᕚᓂᐅᐸ ᓴᖤᖓ ᐃᓱᐅᐸ ᓯᓈᖓᓅᕐᓗ
ᒍ (ᐊᕐᑭᐅᕆᕚᓂᖅ ᐊᑐᕐᑕᐅᑐᐊᕐᐸᑦ, ᐃᓪᓗᑐᖅ ᐊᕐᑭᐅᕆᕚᓂᕐᑐᖕᕆᖁᓐᓇᓇᐊᓚᒃ); ᐅᓛᓘᓐᓃ
ᑦ ᐊᓈᓇᐅᐸ ᐃᒻᒧᖕᒐ ᐅᓛᓘᓐᓃᑦ ᓇᑦᓯᕚᓂᐅᐸ ᓯᕐᕐᑯᖕᒐᑕ ᐅᕐᓯᖕᒐ ᒥᖕᒍᐊᕈᑎᕆᓗᒍ ᐃ
ᓵᓪᓗᑐᖕᕆᓐᓂᒃ. ᒥᑭᔦᖅ ᒪᓂᕋᐅᑦᓯᓂ ᐃᐱᑦᓴᐅᑎᒃ ᐅᓴᕋᖅ ᐅᓛᓘᓐᓃᑦ ᒪᓃᑦ ᐊᑐᕐᑕᐅᒍ*

*ᐊᕐᓇᐅᐸ ᐱᐊᕋᕐᑖᓂᖕᒐ ᐃᒻᒥᓃᓰᖅ. ᐊᖃᔪᑦ ᐊᐅᓈᕐᑐᓄᑦ ᓇᖕᕆᑲᓴᐅᓪᓗᓰᕚᓃᑉ, ᐊᒻᒪᓗ ᐆᓇᕐᑐᒥᒃ ᓯᐅᕋᕐᒥᒃ ᓈᕐᒥᐅᑕ
ᖃᕐᐸᓯᑎᒃ ᐊᐅᓈᕐᓇᓵᓚᑐᐊᕋᒥᒃ. ᐆᓇᕐᓯᓯᒪᔦᖅ ᓯᐅᕋᖅ ᐅᓴᕋᕐᑑᓃᑦ ᐊᑐᕐᑕᐅᓰᒍᓐᓂᒥᔦᖅ ᐊᕐᓇᖅ ᒪᕐᕈᓂᒃ ᐱᖕᒐᓯᓂᓗ
ᓐᓃᑦ ᑕᕐᕐᑭᖃᓚᑐᐊᕐᒪᑦ ᐱᐊᕋᑦᓴᖕᒐ ᓯᒃᑯᓛᖕᕆᒪᕋ, ᑭᓯᐊᓂ ᑕᒪᓐᓇ ᐊᕐᓇᒧᑦ ᐊᑦᑕᓇᕐᑑᒍᓐᓇᒥᔦᖅ ᓯᐊᕈᕆᐊᖕᒍᓚᕐᐸ
ᕋ. ᐅᖃᕐᓯᒪᔦᖃᕐᑐᖅ ᖃᓄᐃᓐᖕᕆᑐᑦᓯᐊᒥᒃ ᓯᑲᑦᑐᒥᓪᓗ ᐱᐊᕋᑦᓵᑲᕈᓚᒃ ᐅᒪᓐᖕᒐᓚᒦᖅ ᑐᐹᑐ
ᐊᕈᓂ ᒪᑭᑦᓴᐅᑎᕆᕆᐊᓚᒃ ᐊᓂᕆᕐᓗᓂᓗ, ᐅᓪᓗᑯᓪᓗ ᓯᓂᖃᑦᑕᕈᓐᓄᓗᓂ. ᐊᒻᒪᓗᑦᑕᐅᖅ, ᑲᑦᒪᒥ ᓄᕐᖃᓗᓂ ᓂᑯᕐᖃᐅᒐᕐ
ᓗᓂ ᓯᓚᒧᑦ ᑕᑯᓐᓇᐅᒐᕆᐊᖃᕋᓂ, ᐊᒻᒪᓗ ᖁᐃᕆᐊᖃᕋᓂ ᐊᓇᑎᐊᖃᕋᓂᓗ ᐃᓪᓘᑉ ᐃᓗᐊᓂ. ᐊᕐᓇᖅ ᐱᐊᕋᑦᓵᕋᓯᐊᓯᒻ
ᒪᑦ ᐃᕐᓂᓯᕐᔫᓯ ᖁᕐᕐᑯᓴᐅᓪᓚᑐᕕᓂᖅ. ᐃᕐᓂᓯᕐᔫᓯᑦ ᐊᕐᓇᐅᓪᓗᓯᕚᓃᑉ, ᐅᖃᐅᑎᓴᐅᓯᒪᑦᓯᑕᓗ, «ᐊᕐᓇᖅ ᓄᑕᕐᑖᕐᑎᑦᓯ
ᖅ ᐃᓚᓐᓂᐊᓯᒪᔦᖅ. ᐃᓚᓐᓂᐊᓇᐊᓯᓯᕚᓂᖅ ᓂᕚᕐᓯᐊᕐᕙᐅᖕᕆᓐᓈᓯᓂ ᐊᕐᓇᐅᐸ ᐱᐊᕋᑦᓵᕋᓯᐊᕐᓂᓚᖏᖕᒐᓂ ᐁᓯᒪᓪᓚᑦᓯᓂ
ᐃᓚᓐᓂᐊᑎᑕᐅᑦᓯᐊᕚᓐᖕᒐᓯᓂ.» ᐊᑯᓂᐅᓗᐊᕐᑐᖅ ᐃᐸᒍᓯᑐᐊᕈᓂ, ᐱᐊᕋᑦᓵᕋᓯᐊᕐᑐᖅ ᓇᔦᒻᒥᓴᐅᓪᓚᑐᕕᓂᖅ ᑐᓄᒥᒍᑦ ᓴ*

Boreal Medium

Agriculture Heat Waves

George W. Bush International Style

Steady State Economy Green Infrastructure Plastic

Pinjore Integrated Chain Management

GUY STEWART CALLENDAR
REGION TO REGION CODES
CROP FAILURES VIGELAND
ENERGY MODERN ARCHITECTURE
SHELFORD'S LAW OF TOLERANCE
RADIATIVE FORCING WILDERNESS

Protected Species Concrete
Greenhouse Effect Complex
Nature Climate Change Cfcs
Industrial Ecology: An Introduction
National Snow And Ice Data Center
Energy-Efficient Landscape Design

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CATEGORY SNOWFALL RAW MATERIAL GLACIER RETREAT ENERGY ACCOUNTING ISO 14000 WARWICKSHIRE 16TH CONFERENCE OF THE PARTIES

THERMAL INERTIA GALLUP Automotive Oil Horticulture

OZONE LAYER TRANSPORT Japan Relative Nonlinearity

RESERVOIRS ADVERTISING One Or Two Thousand Years

MULTI-AGENT THERMODYNAMICS Materials Recovery Facility Control

EARTH IMMUNE SYSTEM LUMBER Integrated Chain Management City

TRAGEDY OF THE COMMONS IPAT Glacier Retreat C. West Churchman

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Sustainable architects design with sustaina ble living in mind. Sustainable vs green des ign is the challenge that designs not only re flect healthy processes and uses but are po wered by renewable energies and site speci fic resources. A test for sustainable design i s — can the design function for its intende d use without fossil fuel — unplugged. This challenge suggests architects and planners design solutions that can function without pollution rather than just reducing pollutio

In 2004 the 59 home housing community, the Solar Settlement, a nd a 60,000 sq ft (5,600 m²) integrated retail, commercial and res idential building, the Sun Ship, were completed by architect Rolf Disch in Freiburg, Germany. The Solar Settlement is the first hous ing community worldwide in which every home, all 59, produce a positive energy balance. An essential element of Sustainable Buil ding Design is indoor environmental quality including air quality, i llumination, thermal conditions, and acoustics. The integrated de sign of the indoor environment is essential and must be part of t

Concurrently, the recent movements of New Urbanism and New Classical Architecture promote a sustainable approach towards construction, that appreciates and develops s mart growth, architectural tradition and classical design. This in contrast to modernist and globally uniform architecture, as well as leaning against solitary housing estates an d suburban sprawl. Both trends started in the 1980s. The Driehaus Architecture Prize is an award that recognizes efforts in New Urbanism and New Classical Architecture, and is endowed with a prize money twice as high as that of the modernist Pritzker Prize. A v ariety of philosophies, policies and practices have contributed to these goals. People in many different capacities, from farmers to consumers, have shared this vision and cont

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ᓵᑦᑐᔮᖅ ᕿᔭᖅ ᐃᒧᓯᒪᔭᖅ ᖃᓪᓗᓈᕐᑕᒧᑦ ᑯᑦᓯᓂᖓ ᑕ ᐊᑖᓅᕐᑕᐅᕙᑦᑐᕕᓂᖅ. ᐃᕐᓂᓯᕐᔫᔾ ᓂᑯᕐᖁᓯᓂ ᑐᓄᐊ ᓂ, ᔫᕐᖁᖕᒐᑕ ᐃᓪᓗᐊ ᕿᔭᒻᒦᓯᓂ ᓵᑦᑐᔮᒥ ᑕᓕᕆᓪᓗ ᐃᕿᒻᒥᑎᓪᓗᑭᒃ ᓄᑕᕋᕐᑖᕋᓯᐊᕐᔫᑉ ᐊᒦᒪᕆᑦᑕ ᐊᑖᒍᑦ, ᑭ ᕕᒐᓛᐱᕐᑲᑦᑕᓱᒍ. ᐊᕐᓇᐅᒥᔭᖅ ᐊᒡᒐᒥᓂᒃ ᐅᕐᑯᒻᒥᑕᐅᑎ ᑦᓯᑎᓪᓗᒍ ᕐᑯᐃᕐᑐᑎᑦᓯᒐᓯᐊᕐᓯᓂ – ᓄᑕᕋᕐᑖᕋᓯᐊᕐᑐᖅ ᕐᑯᐃᕐᑐᑐᐊᕈᓂ ᓄᑕᕋᕐᒥᒃ ᐊᓂᑎᑦᓯᓚᕐᑭᓚᖕᒐᒐᒥ. ᓄᑕᕋᕐ ᑖᕋᓯᐊᕐᑐᖅ ᑲᓐᖑᓯᓂᐊᖕᒋᒻᒪᑦ ᐅᑦᓯᖕᒐ ᐅᓕᑦᓯᒪᑎᑕ ᐅᓰᕕᓂᖅ, ᓄᑕᕋᕐᓗ ᐊᓂᒍᓐᓇᖕᒋᐅᒪᑐᐊᕐᒪᑦ, ᖃᐅᔾᒪᔭᒻ ᒪᓇᒃ (ᐃᕐᓂᓯᑦᔫᔾᐅᑉ ᐊᔪᐊ) ᐅ_ᕙᓰᕕᓂᖅ ᐊᒃᒐᒥᓐᓂᒃ ᓇᑦᓯᐅᑉ ᐅᕐᓯᖕᒐᓄᑦ ᓄᑕᕋᕐᒥᒃ ᐊᓂᑎᑦᓯᑭᐊᓚᖕᒐᓯᒐᒥ

ᐆᒪᔭᕕᓂᐅᑉ ᕿᓯᖕᒐ ᓄᑕᕋᕐᒧᑦ ᑲᑕ_ᕕᐅᓚᖕᒐᔭᖅ ᐃᓕᔭᐅᓰᖅ ᓇᑎᕐᒧᑦ. ᖃᓚᓯᖕᒐ ᓅᓕᖕᒐᔭᖅ ᕿᓚᑦᑕᐅᓰᖅ ᓄᑕᕋᐅᑉ ᖃᓚᓯᖕᒐᑕ ᓴᓂᐊᒍᑦ ᓇᑲᑕᐅᑦᓯᓂᓗ ᓴᐅᓂᕕ ᓂᕐᒧᑦ, ᑭᓯᐊᓂ ᐋᕕᓂᖕᒐ ᐊᓂᕐᖃᔅᓐᖕᒋᐅᒪᑐᐊᕐᒪᑦ, ᖃᓚᓯᖕᒐᓅᓕᖕᒐᔭᖅ ᕿᓚᑦᑕ ᖄᓰᖅ ᓄᑕᕋᕐᑖᕋᓯᐊᕐᑑᑉ ᔫᕐᖁᖕᒐᑎᔫᕐᑎᓯᒍ UL ᐊᑦᑕᓇᐊᐱᑦᓯᒍ ᓯᒃᑫᑐᐊᐱᐅᑦᓯᓂ ᓗ ᓄᑦᓯᑕᐅᓂᐊᓕᕐᒥ. UL ᓄᑕᕋᐅᑉ ᖃᓚᓯᖕᒐ ᒪᑦᑐᑎᕐᑕᐅᓰᕕᓂᖅ ᐆᓯᒪᔭᒧᑦ ᒪᓂᕐ ᒧᑦ ᐅ_ᕙᔫᓐᓃᑦ ᓯᐳᑎᒧᑦ ᐊᕐᔭᓕᓂᕐᓄᓗ ᓇᑲᑕᐅᕕᕕᓂᖕᒐ ᒪᒥᑉᐸᓕᐊᓂᐊᕐᒪᑦ. «UL ᓐᖕᒐᓕᒦᖅ ᓄᑕᕋᖅ ᑭᕕᑦᑕᐅᕆᐊᓐᖕᒐᐸᕆᐊᓕᒃ ᑕᓕᕐᐱᖕᒐᑎᒍᑦ ᐊᒃᒐᖕᒐᑎᒍᑦ,» ᐅᖃ ᐅᑎᔭᐅᓯᒪᔭᒍᑦ, «ᓄᑕᕋᖅ ᓴᐅᒥᐅᓛᓐᖕᒋᒪᑦ ULᓐᖕᒐᓗ ᑕᓕᕐᐱᒥᓄᑦ ᐱᓇᓯᐊᑦᓯᐊᐸᓛ ᕐᒪᑦ,» ᓄᑕᕋᕐᑖᕆᔭᐅᔭᖅ ᕿᐊᓯᑲᐱᓐᖕᒋᑐᐊᕐᒪᑦ, ᓄᓗᖕᒐ ᐸᑎᑦᑕᑕᐅᓰᕕᓂᖅ, ᐊᓪᒪᓗ

ᑭᓇᑐᐃᓐᓇᖅ ᕿᖕᒐᒃᑯᑦ ᐊᐅᓅᓪᒪᓇᑐᐊᕐᐸᑦ, ᐊᐳᑎᒃ ᑐᓄᓯᖕᒐᓅᕐᑕᐅᓰᖅ, ᖃᓂᖕᒐᑕ ᕿᓚᖕᒐᓄᑦ ᐅ_ᕙᔫᓐᓃᑦ ᑮ ᓐᖕᒐᓄᑦ ᐊᐅᓅᕐᑐᖅ ᓂᓪᓕᔩᒥᓂᐊᕐᒪᖅ. ᕐᑯᐊᕐᓂᑖᕐᑐᖅᕐᓂᐊᖕᒋᓪᒪᑦ, ᐊᒃᒌᑦ ᐅ_ᕙᑕᐅᒍᓐᓇᑐᑦ ᓄᑖᒧᑦ ᓴᓗᒪᔭᒧ ᑦ ᐊᐳᑎᒧᑦ; ᐅ_ᕙᔫᓐᓃᑦ ᐅᐸᓗᓗᐊᕐᑐᐊᕐᐸᑦ, ᕐᑯᐊᕐᓃᑦ ᐊᐳᑎᒧᑦ ᒪᑐᔭᐅᕆᐊᓖᑦ. ᐃᓪᓗᑐᖅᑲᓂᐊᓐᖕᒋᓪᒪᑦ, ᐊᐳᑎᒃ ᐃᕐ ᕈᐃᒍᑕᐅᓰᖅ ᐃᔾᔨᓐᓂᒃ ᑕᓇᐅᖕᒋᔦᒍᑎᑭᑦᓯᒍ. ᐃᓛᓐᓂ, ᓂᓚᒃ ᐊᑐᕐᑕᐅᓰᖅ ᐆᓇᕐᑐᓂᒃ ᐆᓇᕈᓐᓃᓕᐅᒥᑎᑦᓯᒍᑕᐅᑦᓯ ᓂ. ᐆᓇᕐᓯᓯᒪᔭᑦ ᐅᔭᕈᑦ ᓯᐅᕈᓪᓗᓃᑦ, ᐃᒧᓯᒪᑦᓯᑎᒃ ᖃᓪᓗᓈᕐᑕᒧᑦ, ᐊᑐᕐᑕᐅᕙᓪᓗᓯᑦ «ᐆᓇᕐᑐᖅᑲᐅᑎᐅᔮᕐᑎᓪᓗᕆᑦ.» ᑭᓯᐊᓂ ᐅᔭᕈᑦ ᓇᓪᓕᖄᕐᑕᐅᓯᐊᓪᒪᓇᕆᐊᓖᑦ. ᓴᓗᒪᔩᓗᑎᒃ ᓄᓇᐅᓪᓗ ᖄᖕᒐᓃᓪᓗᑎᒃ, (ᓄᓇᒧᑦ ᒪᓐᖕᒍᓯᒪᒍᓐᓅᓗ ᑎᒃ). ᐃᓚᖕᒋ ᐃᓄᐃᑦ ᐊᑐᕈᒪᓂᕐᓴᐅᓰᑦ ᓵᑦᑐᔮᒥᒃ ᒪᓂᕐᑯᑦᓯᓂ ᕿᕐᓂᑕᐅᑦᓯᓂᓗ «ᓄ_ᕗᓇᑦᓴᐅᑎᒥᒃ ᐅᔭᕐᑯᑦᓯᓂ », ᐃᓚᖕᒋᓪᓗᑕᐅᖅ ᐱᐅᓂᕐᓴᐅᔭᓇᑦᓯᑎᓪᓗᕆᑦ ᐊᐅᐸᕐᑐᓂᒃ ᐅᔭᕐᕐᓂᒃ ᑕᓯᕐᓂᑦ ᐃᒪᕐᐱᒥᓪᓘᓃᑦ ᐱᔭᕕᓂᕐᓂᑦ. ᐅᔭ ᕐᖃᕐᐳᖅ «ᓯᖕᒍᔭᓂᒃ» «ᓴᓐᖕᒌᑐᓂᓪᓗ», ᑭᓯᐊᓂ ᑖᒃᑯᐊ ᐊᑦᓴᒌᓐᖕᒋᓂᖕᒋᑦ ᑕᑯᑦᓴᐅᔭᖕᒋᑦᑐᑦ ᐆᑦᑐᕐᑕᐅᑭᐊᖅ

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Restoration

Appropriate

Béla H. Bánáthy

Sustainable Fishery

Precautionary Principle

Global Warming Controversy

Metabolic Theory Of Ecology Inundation

ICE SHEETS TROPOSPHERIC Solar Irradiance Ozone Layer

TECHNOLOGY ASSESSMENT Infrared Radiation Biosphere

THINKING CLIMATE SYSTEM Urban Infrastructural Capital

ETHICAL INDUSTRIAL REVOLUTION Francisco Varela Resource Efficiency

SUSTAINABLE ARCHITECTURE CITY Dynamics Particularly Deforestation

ADAPTATION TO GLOBAL WARMING Hard Landscape Materials Sea Level

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RESOURCE DEPLETION

HEAT CAPACITY

CLAUDE SHANNON

LANDSCAPE PLANNING

GLOBAL AVERAGE AIR TEMPERATURE

RESIDENCE FOSSIL-FUEL PHASE-OUT

LATITUDES FOOD SECURITY Huisman–Olff–Fresco Models

CONSERVATION MOVEMENT Industrial Symbiosis Outdoor

URBAN DRAINAGE SYSTEMS Earth Chemical Formulations

ECOSYSTEM WASTE MANAGEMENT Food Production Ocean Acidification

CONTAINER DEPOSIT LEGISLATION National Academy Of Sciences Stock

SUSTAINABLE DESIGN BIOLOGICAL Post-Glacial Rebound Technological

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Over the years, as countries and regions arou nd the world began to develop, it slowly beca me evident that industrialization and econom ic growth come hand in hand with environme ntal degradation. Eco-Efficiency has been pro posed as one of the main tools to promote a t ransformation from unsustainable developm ent to one of sustainable development. It is b ased on the concept of creating more goods a nd services while using fewer resources and c reating less waste and pollution. “It is measu

The term was coined by the World Business Council for Sustainable Development (WBCSD) in its 1992 publication “Changing Course,” a nd at the 1992 Earth Summit, eco-efficiency was endorsed as a new business concept and means for companies to implement Agenda 2 1 in the private sector. Ergo the term has become synonymous with a management philosophy geared towards sustainability, combing ec ological and economic efficiency. Although eco-efficiency is a rather new method, the idea is not. In the early 1970s Paul R. Ehrlich and J ohn Holdren developed the lettering formula I = PAT to describe the

The ratios may be applied to any unit comprising economic activities because such activitie s always relate to cost and value, “and having some physical substrate, always influence th e environment.” Furthermore, there are two different levels upon which to orchestrate the r atios: “micro” and “macro”. There are three different methods to determine eco-efficiency a t the micro-level. First, “incremental eco-efficiency”, which “specifies the effects of the tota l value of a product system or sector and its total concomitant environmental effects.” Sec ond, an analysis method nicknamed “win-win”, which “gives a comparison between a histo rical reference situation and potentially new situations based on the use of new technologi es.” It should be noted that the win-win micro-method is limited because it cannot give a c

ᐊᑕᐅᓯᖅ ᐃᓄᒻᒪᓇᒃ ᐅᓂᒃᑳᓯᒪᔪᖅ ᐅᔭᑌᑦ ᒥᑦᓵᓄᑦ: «ᐊ
ᐅᓚᔪᒐᖓ ᐃᓄᒻᒥᒃ ᐅᔭᕋᕐᒥᒃ ᑎᒍᓯᔪᒥᒃ ᓯᑦᔭᒥᑦ ᐊᓅᓇ
ᒻᒪ ᐋᓐᓂᐊᓯᐅᑎᒋᓚᖓᔭᖓᓂᒃ. ᑲᑉᐱᐊᓱᓕᓚᐅᕐᓯᒪᔪᖓ ᐊ
ᐋᓇᒐᓂᒃ ᓂᓇᑎᑕᐅᓂᐊᕐᑐᓇᑦᓯᓯᖓ ᐅᔭᕋᕐᒥᒃ! ᑭᓯᐊᓂ
ᐆᓇᕐᓯᐊᓇᓯᓚᐅᕐᓯᒪᔭᖓ ᐅᒃᑯᓯᐅᑉ ᐃᓗᐊᓂ...» ᓯᐅᕋᖅ
ᓄᐊᑕᐅᓲᕕᓂᖅ ᐃᒪᕐᐱᐅᑉ ᓯᑦᔭᖓᓐᓂᑦ ᑎᓂᓐᖓᓕᑐᐊᕐᒪᑦ
, ᐅ_ᕙᔫᓐᓃᑦ ᓴᐡᒐᑕᐅᑦᓯᓂ ᓴᒪᓐᖔᓗᒃ ᓇᑎᕐᓈᒥᑦ. ᓯᐅᕋ
ᑦᓯᐊᒍᓂᕐᐹᖅ ᑕᐅᑦᑐᖓ ᖃᑯᕐᓂᓴᐅᒐᖅ ᐳᔪᖃᕋᓂᓗ (ᓴ
ᓂᖃᕋᓂᓗ). «ᐆᓇᕐᑐᖃᐅᐲᑦ» ᓯᐅᑌᓐᓇᐅᓯᑎᒃ ᐅᔭᕋᐅᑦᓯᑎ
ᓪᓘᓃᑦ ᐃᑯᓪᓚᐅᒦᓰᑦ ᓈᓚᓇᔪᓂᒃ, ᐅᕕᓂᕐᓗᑐᓂᒃ, ᓇᑲᑦᓯ
ᓚᓇᔪᓂᒃ, ᐊᒻᒪᓗᐊᓪᓛᑦ ᐊᕐᓇᓄᑦ ᐊᐅᓈᕐᓇᓵᕐᑐᓄᑦ. ᓂᓪᓚ

ᑭᒻᒥᓃᑦ ᐱᕈᓰᑦ ᑯᐯᒃ ᑕᕐᕋᓕᒫᑦᓯᐊᖑᓂ: ᐱᕈᓅᑐᐊᕋᒥᒃ ᐊᕐᑭᓪᓚᓰᑦ ᐅᐱᕐᖓᓴᒥ ᑌᑰ
ᓇᓗ ᓄᓂᕙᑦᑕᐅᓲᒍᑦᓯᑎᒃ. ᐊᑕᐅᓯᖅ ᐃᓄᒃ ᐅᕙᑦᑎᓂᒃ ᐅᖃᐅᐲᓯᒪᔪᖅ ᐃᒫᒃ: «ᑭᒻᒥᓃᑦ
ᓲᖑᔫᒻᒪᓇᐊᓗᐃᑦ, ᓲᖑᔫᑦᓴᕋᒥᒃ ᐅᐱᕐᖓᓴᑐᖃᐅᓚᑐᐊᕐᒪᑦ ᖃᓂᐅᑉ ᓯᓈᑭᓐᓂᒃ ᐊᒦᕐᓯ
ᒍᓐᓇᑐᑦ.» ᑭᒻᒥᓃᑦ ᖃᓂᕐᓗᑐᓄᑦ ᐱᐊᕋᕐᓄᑦ ᐋᓐᓂᐊᓯᐅᑎᒋᓴᐅᑎᑕᐅᓲᑦ. ᑭᒻᒥᓇᐅᑉ ᐃᑦᑎ
ᖓ ᖃᓂᕐᒨᓯᒍ ᐋᓐᓂᓇᒐᑖᐱᑦᑐᖅ, ᑭᓯᐊᓂ ᐋᕐᕐᑮᒍᓐᓇᑐᖅ. ᑭᒻᒥᓃᑦ ᓂᓇᓴᐅᓲᒍᒻᒥᔪᑦ
(ᐃᓛᓐᓂ ᑎᕐᑎᓯᒪᑎᓪᓗᑭᑦ) ᐃᐡᒋᐊᓕᓇᔪᓄᑦ ᓂᓇᒍᒉᕐᓯᒪᔪᓄᓪᓘᓃᑦ ᐋᓐᓂᐊᓯᐅᑎᒋᓴᐅᑎ
ᑕᐅᑦᓯᑎᒃ; «ᐃᓚᓐᓂᒃ ᐊᑐᐃᓐᓇᕈᕐᑎᓇᑎᑦᓯᓰᖅ ᓂᕐᑭᑐᐃᓐᓇᒥᒃ ᓂᓇᒍᓐᓇᓛᓚᕐᒥᒐᕕᑦ.
» ᐸᐅᕐᖏᑦ ᐅᖃᐅᔭᖏᑦ (ᐸᐅᕐᖑᕐᑯᐲᑦ) ᐃᓛᓐᓂ ᐊᑐᕐᑕᐅᖑᓰᑦ ᒪᒉᑦᑐᕐᑯᑎᖃᓐᖏᑐᐊ
ᕐᒪᑦ. ᐱᖑᓯᐃᓐᓇᐅᒐᑦ ᐃᓄᐃᑦ ᓄᓇᓕᖏᑦ ᓇᐸᕐᑐᓕᒻᒦᓯᑎᒃ ᑯᐯᒃ ᑕᕐᕋᖑᓐᓂ, ᑭᓯᐊᓂ

ᐊᑐᕐᑕᐅᓂᕐᐸᐅᓲᖅ ᓇᐹᕐᑑᑉ ᒪᒥᖑᑕ ᐃᓗᐊᓃᓐᓂᓴᖑ ᖃᑯᕐᑕᐅᓯᓂ. ᐱᖏᐅᑉ ᐊᒥᑌᓴᕐᓂᑯᕕᓂᖑ, ᑖᓐᓇ ᐃᓗᐊᓃᓐ
ᓂᓴᖅ ᑎᒍᓴᕕᓂᖅ ᑎᕐᑎᑎᑕᐅᓲᖅ (ᐅᓪᓗᓕᒫᑦᓯᐊᖅ) ᑌᒪ ᓯᖃᓪᓕᐊᐱᑦᓴᓯᒍ ᐳᔪᕐᑑᓴᓕᕐᑭᑦᓯᒍ ᐊᔪᐊᕐᒨᑕᐅᓂᐊᓕᕋᒥ,
ᑎᕐᑎᑎᑦᓯᒍ ᐲᒍᓗᓂ ᐋᓐᓂᐊᓯᐅᑎᐅᓕᖑᓕᕐᑎᓗᒍ, ᑕᒧᐊᒍᓗᑐᐃᓐᓇᓯᒍᓗᓐᓃᑦ ᑯᑦᓰᓴᕐᑎᓗᒍ ᓄᕙᓐᓂᐅᑎᒋᓗᒍ. ᐱᖏ
ᕐᒥᑦ ᓇᐸᕐᑐᒥᑦ, ᐃᓄᐃᑦ ᐊᑐᓰᑦ ᐃᓗᐊᓃᓐᓂᓴᖑᓂᔫᓐᓃᑦ ᒪᒥᖑᓂᒃ ᓇᐸᕐᑐᑉ ᐊᑖᖑᓃᑦᑐᕕᓂᕐᒥᒃ ᐅ_ᕙᑑᓐᓃᑦ ᐊ
ᑭᕈᖑᓂᒃ; ᐅᖃᕐᑕᐅᒪᔪᖅ ᐊᑯᓂᓂᑕᐅᓂᕐᓴᑦ ᐊᑭᕈᐃᑦ ᕿᕐᓂᓂᕐᓴᐅᒪᑕ ᐅᕐᓯᖃᕐᓂᓴᐅᑦᓯᑎᓗ. ᐱᐅᓂᕐᐸᖅ ᐃᓗᐊᓃᓐ
ᓂᓴᖅ ᒪᒥᖑ ᐱᓰᖅ ᐊᑯᓂᓂᑕᐅᓂᕐᓴᒥᑦ ᐊᑭᕈᕐᒥᑦ, ᑭᓪᓕᓕᓇᒍᑕᐅᓰᒍᑦᓯᓂ, ᐊᔪᐊᕐᓂᒃ ᐃᒻᒪᓯᒪᔪᓂᓪᓗ. ᐱᖏᐅᑉ ᓇ
ᐸᕐᑑᑉ ᑯᑦᓯᖑ ᑕᒧᐊᓴᐅᓯᓯᑉ ᐊᕐᑭᓪᓕᓴᑦᓯᓂ ᑌᒪ ᑭᓪᓕᒨᕐᑕᐅᓂᐊᓕᕋᒥ ᐆᓐᓂᒧᓪᒍᓗᓂᑦ ᑭᓕᕐᑐᕕᓂᖅ ᐅᑦᑐᕕᓂᕐ
ᑑᓂᑦ ᒪᒥᓂᐊᕐᒪᑦ ᐋᓐᓂᐊᒍᓐᓂᓚᐅᒥᓂᐊᕐᒪᑐ. ᑭᒍᓯᓇᔪᑦ ᐃᑯᓪᓚᐅᒥᓴᐅᒍᓐᓇᑐᑦ ᑭᒻᒥᐊᑐᑎᒃ ᐱᖏᕐᒥᒃ; ᑕᒪᓐᓇ ᐃᑲ
ᔪᕐᓯᓰᒍᒻᒥᔪᖅ ᒥᑐᑦᓯᓯᓂ ᓴᑐᒉᓐᓂᓚᒫᓂᒃ ᒪᕐᑭᓂᓪᓘᓃᑦ ᐋᓐᓂᐊᑎᑦᓯᔪᓂᒃ. ᑕᒧᐊᓂᖅ ᐱᖏᕐᒥᒃ ᐹᑎᑦᓯᓰᖅ ᐅᕕᓂ

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Circulation

Coral Reefs

Albrecht Effect

Protected Species

Recycling (Ecological)

Atmospheric Brown Clouds

Earth’s Average Surface Temperature

POLLUTANTS INUNDATION **Saihō-Ji Systems Scientists**

LISTS SUSTAINABLE YIELD **Infrastructural Capital Star**

SOCIOTECHNICAL SYSTEM **Materials Recovery Facility**

CARBON CAPTURE AND STORAGE **Principles Of Intelligent Urbanism**

METABOLIC THEORY OF ECOLOGY **Stratosphere Full Cost Accounting**

SOLAR RADIATION MANAGEMENT **Dematerialization (Economics) Ice**

Boreal Bold

DYNAMICS LATITUDES

PPM VEHICLES

CLOUD FORCINGS

ENERGY ACCOUNTING

INDUSTRIAL METABOLISM

ECO-INDUSTRIAL DEVELOPMENT PH

INPUT-OUTPUT MODEL PH **Greenland Ice Sheet Floods**

ABRUPT CLIMATE CHANGE **Environmental Assessment**

PET BOTTLES LANDSCAPE **Our Common Future (1987)**

JAPANESE GARDEN AGRICULTURE **Heat Capacity Indigenous Peoples**

YALE UNIVERSITY CONSERVATIVE **Human (Anthropogenic) Activities**

INFRASTRUCTURE REPURPOSING **Abandonment Of Populated Areas**

Boreal Bold

Recycling has been used in art since the ea rly part of the 20th century, when cubist a rtist Pablo Picasso (1881-1973) and Georg es Braque (1882-1963) created collages fr om newsprints, packaging and other foun d materials. The “Outside Art” movement i s recognized as a genuine expressive art fo rm, and is celebrated because of the mater ials used and not in spite of them. The sam e principle can be used inside the home, w here found objects are now displayed with

In pre-industrial times, there is evidence of scrap bronze and ot her metals being collected in Europe and melted down for perp etual reuse. Paper recycling was first recorded in 1031, when Ja panese shops sold repulped paper. In Britain dust and ash from wood and coal fires was collected by “dustmen” and downcycle d as a base material used in brick making. The main driver for th ese types of recycling was the economic advantage of obtaining recycled feedstock instead of acquiring virgin material, as well as a lack of public waste removal in ever more densely populate

Recycling was a highlight throughout World War II. During the war, financial constrain ts and significant material shortages due to war efforts made it necessary for countri es to reuse goods and recycle materials. These resource shortages caused by the wor ld wars, and other such world-changing occurrences, greatly encouraged recycling. T he struggles of war claimed much of the material resources available, leaving little fo r the civilian population. It became necessary for most homes to recycle their waste, as recycling offered an extra source of materials allowing people to make the most of what was available to them. Recycling household materials meant more resources for war efforts and a better chance of victory. Massive government promotion campaigns

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ᐃᒍᓇᐅᓕᕐᑐᖅ ᐃᖃᓗᑉᐱᕕᓂᖅ ᓂᕆᔭᐅᓲᖅ ᐁᐸᔮᑎᓪᓗᒍ ᐊᓇᕈᓐᓇᖏᐅᒪᔭᒧᑦ. ᐃᒍᓇᕐᓱᐊᕆᓗᒍ, ᐃᖃᓗᑉᐱᒃ ᓴᐅᔭᐅᒪᓲᖅ ᐅᓴᕋᓪᓚᓄᑦ, ᐅᐱᕐᖔᒥ/ᐊᐅᔭᒥ ᓴᐅᔭᕕᓂ ᐅᒍᓂ ᐱᐅᕆᓴᐅᓂᕐᐹᖅ. ᖃᓚᒪᔪᖅ ᑲᓇᔪᕕᓂᖅ ᓂᕆᔭ ᐅᓲᖅ ᒥᕆᐊᑎᕇᓐᓇᑐᓄᑦ ᓂᕆᒍᒣᕐᓯᒪᔪᓄᓪᓘᓃᑦ ᖃᓂ ᒪᒍᑦ. ᓵᑦᑐᔮᑦ ᐁᐸᔭᑦ ᐃᖃᓗᑉᐱᕕᓂᐅᑉ ᓂᕿᑕᖏᑦ ᐊ ᑐᕐᑕᐅᒍᓐᓇᒥᔭᑦ ᐊᔭᐊᕐᒥᒃ ᓄᐃᑎᑦᓯᒍᑕᐅᓴᕆᐊᕐᑐᑎᒃ. ᐃ ᖃᓗᑉᐱᕕᓂᐅᑉ ᓈᖓᑕ ᐊᒥᓴᖓ ᑭᓪᓕᓕᕆᒍᑕᐅᔪᖅ. ᐊᒥᓴᖓᑕ ᐃᓗᕐᓯᖓ ᐅᕕᓂᓪᓘᑕᐅᔪᖅ ᒪᒥᑎᑦᓯᓚᕿᓂ ᐊᕐᒪᑦ ᐃᒻᒪᑎᑦᓯᑌᓕᓂᐊᕐᒪᑐ. ᐆᑲᐅᑉ ᑎᖑᖓᑕ ᐅᕐᓯ ᖓ (ᐆᒑᓗᐊᐱᒃ), ᖃᓗᕋᐅᑎᐅᓈᕐᑎᑎᓗᒍ, ᐱᐅᔪᒻᒪᕆᐅᒻ

ᕿᒻᒥᐅᑉ ᐊᓇᖓ «ᐊᕿᑦᑑᓗᐊᕋᓂ» «ᓱᑎᔫᓪᓗᐊᕋᓂᓗ» ᖃᓄᐃᓐᖏᓱᐊᕐᑐᒥᑦ ᕿᒻ ᒥᒥᑦ ᐱᔭᕕᓂᖅ ᐃᒧᓴᐅᓗᓂ ᑐᒃᑐᕕᓂᐅᑉ ᒪᒥᖓᓄᑦ ᖃᓪᓗᓈᕐᑕᒧᓪᓗ ᐊᑐᕐᑕᐅᒍᓐ ᓇᑐᖅ ᒪᕿᒥᒃ ᓄᐃᑦᓯᒍᑕᐅᓴᕆᐊᕐᓗᓂ, ᐅ_ᕙᓘᓐᓃᑦ ᓂᕈᒥᑦᓯᐊᖑᓗᓂ ᑭᐊᑦᓴᐅᑎ ᐅᑉ ᓴᓂᐊᓂ ᒥᖑᐊᕈᑕᐅᓗᓂ ᐅᕕᓂᓪᓘᑦ ᓇᒡᒍᐊᓕᓇᔪᓄᑦ ᐸᕐᑎᑐᓄᓪᓘᓐᓃᑦ. ᕿᒻᒥᐅ ᑉ ᐊᓇᖓ ᐊᑐᕐᑕᐅᔫᒍᓪᒥᔪᖅ ᐊᔭᐊᑉ ᐃᓄᖓ «ᐃᑦᔪᑯᑦᑐᒧᑦ ᐊᓂᑎᑕᐅᑎᓪᓗᒍ»; ᐊᔭ ᐊᑉ ᐃᓄᖓ ᐲᑐᐊᕐᒪᑦ ᒪᕿᒃ ᕿᒻᒥᐅᑉ ᐊᓇᖓᓅᕐᑕᐅᔪᖅ ᐊᔭᐊᕐᑐᖅ ᐊᑯᓂᐊᓗᒃ ᐊᔭᐊᓕᑖᖏᒪᑦ. ᐁᐸᔭᖅ ᕿᒻᒥᕕᓂᐅᑉ ᐅᕐᓯᖓ ᒥᖑᐊᕈᑕᐅᔫᒍᓪᒥᔪᖅ ᐅᖑᓂᒃ ᐊᒻᒪᔪᓂᓪᓘᓐᓃᑦ ᐊᔭᐊᕐᓂᒃ ᐅᕕᓂᖓ ᖄᑐᐃᓐᓇᒥᒍᑦ ᒪᒥᔫᓐᓇᓂᐊᖏᒪᑦ, ᓂᕿᑕ ᖓ ᐃᑭᐊᖓᓂᑦᑐᖅ ᒪᒥᖅᑳᓇᐊᖃᕐᒪᑦ. ᕿᒻᒥᐊᕋᕕᓂᐅᑉ ᒪᒥᖓᑕ ᓴᓂᕌ ᐋᖅᑮᒍ

ᓄᑭᖏᑦ ᐃᕙᓗᐃᑦ, ᐱᓴᕕᓂᐅᑦᓱᑎᒃ ᑐᒃᑐᕕᓂᐅᑉ ᕿᒥᕐᓗᖓᓐᓂᑦ, ᐃᓚᖅᑭᑕᐅᓲᑦ, ᓴᓗᒻᒪᓴᕐᑕᐅᓱᑎᒃ, ᐸᓂᕐᓱᐊᒍ ᑦᓱᑎᒃ ᑌᒪ ᐃᕙᓗᑦᓴᓴᓇᓴᐅᓂᐊᓕᕋᒥᒃ ᒥᕐᓱᕈᑕᐅᑦᓱᑎᒃ ᑭᓪᓚᒪᓇᓐᓂᒃ, ᑭᒍᑌᕐᓱᒍᑕᐅᑦᓱᑎᑑᓐᓃᑦ ᐸᓚᖓᔭᒥ ᒃ, ᓱᒦᑦᓵᑎᑦᓱᒍᑕᐅᑦᓱᑎᓗ ᐃᑎᕉᑉ ᐊᖅᑯᑎᖓᓂᒃ (ᑌᒣᓐᓂᐊᕈᓂ ᓱᕗᓪᓕᒥ ᕿᑦᓴᑕᐅᒋᐊᓕᒃ ᑕᑭᔫᓚᓗᒍ ᓱᑎ ᓚᓗᒍᓗ, ᑌᒪ ᐅᕐᓱᒥᑎᕐᑕᐅᓂᐊᓕᕐᒪᑦ ᓇᑦᓱᕕᓂᐅᑉ ᐅᕐᓱᖓᓂᒃ), ᒪᖀᔪᒍᑎᐅᒍᑦᓱᓂᓗ ᐊᔭᐊᕐᓂᒃ. ᑐᒃᑐᕕᓂᐅ ᑉ ᑐᓄᖓ, ᐱᐅᓂᕐᐹᖅ ᑕᕐᑐᖓᓂᑦᑐᖅ ᑐᓄᖅ, ᑕᒧᐊᓴᐅᖅᑳᓱᓂ ᑭᓪᓘᕐᑕᐅᓲᖅ (ᐊᐅᓈᕆᓐᓂᐊᕐᒪᑦ) ᐊᔭᐊ ᕐᓅᑕᐅᔪᒍᑦᓱᓂᓈᓐᓃᑦ ᐃᒻᒪᓯᒪᔪᓄᓪᓗ. ᐊᒥᑦᑐᑳᖀᐲᑦ ᑐᓄᐃᑦ ᐊᓇᕈᓐᓇᖏᐅᒪᔮᑉ ᐃᑎᖓᓄᑦ ᑐᖅᑯᑕᐅᒍᓐᓇ ᒥᔭᑦ. ᐊᕕᓐᖓᕕᓃᑦ ᒪᒥᖏᑦ ᐊᑐᕐᑕᐅᔫᑦ ᐊᔭᐊᓂᒃ ᒪᖀᔪᒍᑕᐅᑦᓱᑎᒃ. ᐊᕕᖕᒉᑦ ᑐᖅᑯᑕᐅᒋᐊᓖᒃ ᐅᐱᕐᖔᒥ/ᐊᐅ ᔭᒥ, ᑌᒪ ᒪᒥᖓᑕ ᐃᓗᕐᓱᖓ ᒥᖅᑯᖓᓂᑦᑐᖅ ᐲᕐᑕᐅᓂᐊᕐᒪᑦ, ᒥᖅᑯᖓ ᐸᓂᕐᓱᐊᒍᑦᓱᓂ ᑭᓪᓚᓛᓚᐅᕐᑕᐅ ᖅ ᒥᑭᔪᕐᓚᓂᒃ ᒥᑦᓱᕐᓯᒍᑕᐅᕙᕐᒪᑦ ᒪᕿᒥᒃ. ᖃᐅᓯᓕᕐᑕᐅᖅᑲᓇᐊᓕᒃ ᐅᕕᓂᓪᓘᑕᐅᓚᐅᕆᓂ. ᐃᓛᓐᓂ ᐃᓄᐃᑦ ᐊᕕ

Boreal Bold Italic

Advertising

Soil Science

Niklas Luhmann

Ocean Acidification

Global Warming Hiatus

Complex Resource Recovery

Instrumental Temperature Record Star

NATIONAL ACADEMY PRESS ***Inundation Coastal Flooding***

URBAN ECOLOGY SUNSPOT ***Chartered Adaptive Capacity***

LANDSCAPE ARCHAEOLOGY ***Outline Energy Conservation***

INTEGRATED CHAIN MANAGEMENT ***Environmental Psychology Nunavut***

GREENHOUSE GASES BLUE BOXES ***Nonlinear Low-Impact Development***

HISTORY OF INDUSTRIAL ECOLOGY ***Lisbon Principles Greenhouse Effect***

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DAMS CITY DORDOGNE TROPOSPHERE AGENDA 21 (1992) HEINZ VON FOERSTER SYSTEMS SCIENCE PORTAL STAKEHOLDER ANALYSIS INSOLATION

CARBON DIOXIDE REMOVAL Automotive Oil Conservative

REBOUND EFFECT ETHICAL Cancún Scientific Consensus

POLLUTER PAYS PRINCIPLE Energy R/K Selection Theory

SOLID AND LIQUID PARTICLES G77 Extremes Variations In Earth's Orbit

ECONOMICS OF GLOBAL WARMING Container Deposit Legislation Texas

LOW-CARBON ECONOMY DESERTS Particularly Deforestation Complex

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There remains no completely agreed upon d efinition for what a sustainable city should b e or completely agreed upon paradigm for w hat components should be included. General ly, developmental experts agree that a susta inable city should meet the needs of the pres ent without sacrificing the ability of future g enerations to meet their own needs. The am biguity within this idea leads to a great deal of variation in terms of how cities carry out t heir attempts to become sustainable. Ideally

However, minimally a sustainable city should firstly be able to feed itself with a sustainable reliance on the surrounding countryside. S econdly, it should be able to power itself with renewable sources of energy. The crux of this is to create the smallest possible ecologica l footprint, and to produce the lowest quantity of pollution possibl e, to efficiently use land; compost used materials, recycle it or conv ert waste-to-energy, and thus the city's overall contribution to clim ate change will be minimal, if such practices are adhered to. It is es timated that over 50% of the world's population now lives in cities

The purpose of an eco-industrial park is to connect a number of firms and organizations t o work together to decrease their environmental impact while simultaneously improving t heir economic performance. The community of businesses accomplishes this goal throug h collaboration in managing environmental and resource issues, such as energy, water, an d materials. The components for building an eco-industrial park include natural systems, more efficient use of energy, and more efficient material and water flows Industrial parks should be built to fit into their natural settings in order to reduce environmental impacts, which can be accomplished through plant design, landscaping, and choice of materials. F or instance, there is an industrial park in Michigan built by Phoenix Designs that is made

Boreal Bold Italic

ᐁᐸᔪᖅ ᐊᖅᑭᔅᒋᕕᓂᐅᑉ ᓴ_ᕕᖕᒐᑕ ᓂᖅᑭᑕᖕᒐ ᓂᓇᔭᐅᓲ ᖅ ᖃᓂᒪᔪᒪᓇᐊᓗᓐᓄᑦ ᓂᓇᒍᒉᖅᓯᒪᓕᖅᑐᓄᑦ, ᐊᒻᒪᓗ ᓵᑦᑐᐊᐱᐅᓈᖅᑎᑎᓪᓗᒍ ᐊᔪᐊᖅᓅᑕᐅᓯᒍᑦᓯᓂ, ᖁᖕᒋᓯᖅᔫᓯᒍ ᑦᓯᒍᓗ (ᐃᔅᑭᐊᓕᓇᔪᓄᑦ), ᐅ_ᕙᓘᓐᓃᑦ ᐃᓪᓗᑐᓄᑦ ᐃᓲᒃ ᖄᖕᒐᓅᖅᓯᒍ. ᐊᖅᑭᔅᑭᕕᓂᐅᑉ ᖁᖕᒋᓯᖕᒐᑕ ᒪᒥᖕᒐ ᐸᓂᖅ ᑑᑎᓪᓗᒍ ᒪᑦᑐᑎᑭᔭᐅᓯᒍᒻᒥᔪᖅ ᑭᓪᓕᓄᑦ ᐆᓐᓂᓄᓪᓗ, ᓂᐅ ᖕᒐᑕᓗ ᒪᒥᖕᒐ ᐊᔪᐊᖂᑕᐅᒍᓐᓇᓯᓂ. ᐊᖅᑭᔅᑭᕕᓂᐅᑉ ᖁ ᓂᕈᖕᑭᑦ ᐅᐊᕈᑎᖃᖅᑎᓗᑭᑦ ᐃᒍᓇᐅᓕᖅᑐᒥᒃ ᓇᑦᓯᕕᓂᐅᑉ ᐅᖅᓯᖕᒐᓂᒃ ᐅ_ᕙᓘᓐᓃᑦ ᐁᐸᔪᑐᐃᓐᓇᐅᓗᓂ ᐊᖅᑭᔅᑭᕕᓂᐅ ᑉ ᐅᖅᓯᖕᒐ ᑭᓪᓕᓕᓇᒍᑕᐅᒍᓐᓇᑐᖅ. ᓂᓇᔭᐅᓲᖅ ᐃᓗᐃ ᑦᑐᖅ ᑑᓪᓕᕕᓂᓕᒫᖅ ᖃᖅᓴᐅᕕᓂᓕᒫᓪᓘᓂᑦ ᐋᖅᑭᒍᑕᐅ

ᓯᖕᒐᖅᑲᐅᑎᖕᒐ ᐅ_ᕙᓘᓐᓃᑦ ᑐᖅᓯᐊᖕᒐᑕ ᖁᓕᑭᓂᖅᓴᖕᒐ ᓂᓇᔭᐅᕙᓪᓗᓯᒃ. ᑕᒪᓇ ᐊ ᑐᖅᑕᐅᓯᖅ ᕗᕙᓪᓗᑐᓄᑦ, ᐊᓂᖅᑎᓇᑦᓯᐊᖅᑲᔭᓐᖕᑭᑐᓄᑦ ᐃᑦᔭᖕᒍᒍᑦ, ᖄᖅᓯᓯᓄᑦ, ᐅ_ᕙᓘᓐ ᓃᑦ ᐱᐊᕋᖅᓄᑦ ᐅᖅᐳᐃᓇᖅᑐᕕᓂᖅᓄᑦ ᖄᖅᓯᓂᖅᒥᓂ. ᐊᒻᒪᓗᑦᑕᐅᖅ, ᐸᓂᖅᑐᐃᑦ ᑑᓪᓕᕕ ᓂᐅᑉ ᐃᓇᓗᐊᖕᑭᑦ ᑕᒍᐊᔭᐅᓯᒍᒻᒥᔪᑦ ᓈᖕᒍᓂᐅᑎᑭᔭᐅᑦᓯᑎᒃ. ᓂᖅᓕᓇᕕᓂᐅᑉ ᐅᖅᓯᖕᒐ ᖃᓚᒫᖕᑭᑑᑎᓪᓗᒍ ᑭᓪᓕᓕᓇᒍᑕᐅᓯᖅ, ᐊᒻᒪᓗ ᐊᒥᓐᓂᓴᖅ ᓂᖅᓕᓇᕕᓂᐅᑉ ᐃᓴᕈᖕᒐ ᑕ ᓴᐅᓂᖕᒐ ᐃᓗᐃᔭᖅᑕᐅᓯᓂ «ᐃᒥᕈᑎᐊᐱᓕᐊᖕᒍᓯᖅ» ᒥᓗᑦᓯᒍᑕᐅᖅᑲᑦᑕᓂᐊᖅᒪᑦ ᐊᔪᐊ ᑉ ᒪᖅᑭᖕᒐᓂᒃ. ᐁᐸᔪᖅ ᐅᑉᐱᐊᓗᕕᓂᐅᑉ ᐅᖅᓯᖕᒐ ᑭᓪᓕᓕᓇᒍᑕᐅᓯᖅ ᐸᖅᑎᓂᐅᑎᑭᔭᐅᑦ ᓯᓂᓗ, ᐊᒻᒪᓗ ᐱᑦᓯᐅᑏᕕᓂᐅᑉ ᒪᒥᖕᒐ ᓴᓗᒻᒪᓴᒍᑎᐅᓯᒍᑦᓯᓂ ᐃᓲᐅᑉ ᐃᓗᐊᓂᒃ ᖃᓪ ᓗᖕᒐᑕ ᐊᑖᓂ. ᖃᓄᐃᑦᑐᑐᐃᓐᓇᐅᑉ ᑎᒻᒥᐊᕕᓂᐅᑉ ᐃᓴᕈᖕᑭᑦᑕ ᐱᓗᖕᑭᑦ ᐊᑐᖅᑐᒪᓇᐅᒻ

ᓇᑦᓯᕕᓂᐅᑉ ᐅᖅᓯᖕᒐ «ᐋᓐᓂᐊᓯᐅᑎᑦᓯᐊᒍᓂᖃᖅᑕᐅᖅᑲᑦᑕᓯᒪᖁᖅ» ᐃᓄᐃᑦ ᓄᓇᖕᒐᓐᓂ ᐊᒻᒪᓗ ᓯᓕᔪᖅᔫᔭᖅᓯᓂ; ᐊᑐᖅ ᑕᐅᓂᖅᐸᐅᓯᕕᓂᖅ ᐆᒪᔪᕕᓂᐅᒻᒥᔪᓂᑦ ᐱᕈᖅᑐᓂᓪᓗ ᐱᐅᓯᑐᖅᑲᖅᑎᒍᑦ ᐋᓐᓂᐊᓯᐅᑎᕆᔭᐅᑦᓯᓂ. ᐊᑐᖅᑕᐅᓂᖅᐸᐅᓯᕕᓂᖅ ᐋᖅᖄᒍᓐᓇᓂᖅᐸᐅᓯᓂᓗ ᐊᓯᓖᒥᓂᑦ ᐆᒪᔪᕕᓂᐅᑉ ᐅᖅᓯᓇᒻᒥᔭᖕᑭᓐᓂᖅ, ᐆᑦᑐᑎᑭᓗᒍ ᑐᒃᑐᕕᓂᐅᑉ ᑐᓐᓄᖕᒐᓂᑦ ᓇᓄ ᕕᓂᐅᓪᓗ ᐅᖅᓯᖕᒐᓂᖅ, ᐊᑐᖅᑕᐅᒍᓐᓇᓯᓂᓗ ᐁᐸᔩᑎᓪᓗᒍ, ᑎᖅᑎᓯᒪᑎᓪᓗᒍ ᐃᒍᓇᐅᑎᓗᒍᐊᓪᓛᑦ. ᓇᑦᓯᖅ ᑐᖅᑯᑕᐅᑐᐊᖅ ᒪᑦ, ᐅᖅᓯᖕᒐ ᐋᓐᓂᐊᓯᐅᑎᓕᐊᖕᒍᓚᖕᒐᔪᖅ ᓵᑦᑐᐊᐱᐅᓈᖅᑎᑎᓪᓗᒍ ᓇᑲᑎᖅᑕᐅᓯᖅ ᒪᑦᑳᑎᖅᑕᐅᔭᖅᓯᓂ. ᐅᖅᓯᑖᖅᓯᐊᖅᑐᑦ ᐅ ᖅᓯᖅᑲᖅᓂᑳᒥᒃ ᐱᓚᓯᐊᓯᓵᑦ, ᖁᖕᒋᓯᖕᒐᓂᓗᐊᓐᖕᒍᐊᖅ ᐅᐱᖅᖕᒑᒥ/ᐊᐅᔭᒥ ᐊᒻᒪᓗ ᑯᑦᓯᓂᖕᒐᓂᑦ ᐅᑭᐅᒍᓕᖅᒪᑦ. ᐅᖅᓯᖅ ᓴᓗᒻᔩᑭᐊᓕᒃ ᓂᖅᑭᖅᑲᕈᓐᓃᓗᓂ, ᐊᐅᖅᑲᕈᓐᓃᓗᓂ ᓴᓂᐅᒍᓐᓃᓗᓂᓗ.ᖃᓄᐃᑦᑐᑐᐃᓐᓇᖅ ᕗᐃᔾᕕᓂᖅ ᐊᑐᖅᑕᐅᒍᓐᓇ ᑑᖓᓗᐊᖅ, ᐅᑦᔪᕕᓂᐅᑉ ᐅᖅᓯᖕᒐ ᐊᑐᖅᑕᐅᒍᒪᓂᖅᓴᐅᓯᕕᓂᖅ, ᓇᑦᓯᑖᕕᓂᐅᒍᓂᓗ ᐱᐅᑭᔭᐅᓂᖅᓴᐅᓯᓂ. ᐃᓗᓐᓈᓂ, ᐊᖕᒍ ᑎᕕᓂᐅᑉ ᐅᖅᓯᖕᒐ ᐊᖅᓇᓄᑦ ᐋᓐᓂᐊᓯᐅᑎᑭᔭᐅᕙᑦᑐᕕᓂᖅ ᐊᖅᓇᕕᓂᐅᓪᓗ ᐅᖅᓯᖕᒐ ᐊᖕᒍᑎᓄᑦ ᐋᓐᓂᐊᓯᐅᑎᑭᔭᐅᑎ

Uppercase
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Lowercase
a b c d e f g h i j k l m n o p q r s t u v w x y z

Inuktitut
ᐁ ᐃ ᐅ ᐊ ᐯ ᐱ ᐳ ᐸ ᑌ ᑎ ᑐ ᑕ ᕿ ᖁ ᖃ ᖅ ᖏ ᖓ ᖕ ᖗ
ᖙ ᖠ ᖥ ᖨ ᖩ ᖪ ᖫ ᖬ ᖭ ᖮ ᖯ ᖰ ᖱ ᖲ ᖳ ᖴ ᖵ ᖶ ᖷ ᖸ ᖹ ᖺ ᖻ
ᖽ ᖾ ᗅ ᗆ ᗇ ᗈ ᗉ ᗊ ᗋ H ᗍ ᗎ ᗏ ᗐ ᗑ ᗒ ᗓ ᗔ ᗕ F X

Standard punctuation
! ¡ ? ¿ . , : ; … _ - – — / \ | ¦ ( ) [ ] { } ‘ ’ “ ” ‚ „ ' " ‹ › « » • · * † ‡ @ &

Case-sensitive forms
! ¡ ? ¿ - – — ( ) [ ] { } ‹ › « » · @

Symbols
§ ¶ © ℗ ® ™ ª º №

Ligatures
Discretionary ligatures
Historical ligatures
ﬁ ﬂ ﬀ ﬃ ﬄ ff fh ffh ffi fj ffj fk ffk ffl ft fft Th ct st sp ſ

Figures (Lining proportional)
0 1 2 3 4 5 6 7 8 9 Ø € $ ¢ £ ƒ ¥ #

Figures (Oldstyle proportional)
0 1 2 3 4 5 6 7 8 9 Ø € $ ¢ £ ƒ ¥ #

Figures (Lining tabular)
0 1 2 3 4 5 6 7 8 9 Ø € $ ¢ £ ƒ ¥ #

Figures (Oldstyle tabular)
0 1 2 3 4 5 6 7 8 9 ø € $ ¢ £ ƒ ¥ #

Mathematical symbols
Fractions
+ − ± × ÷ = ≠ ~ ≈ ^ < > ≤ ≥ ¬ ¤ ∞ ◊ Δ Ω ∂ ∫ √ ∑ ∏ π µ ° ¼ ½ ¾ % ‰

Superior / Inferior
0 1 2 3 4 5 6 7 8 9 , . ( ) + − × ÷ = € $ ¢ / 0 1 2 3 4 5 6 7 8 9 , . ( ) + − × ÷ = € $ ¢

Numerator / Denominator
0 1 2 3 4 5 6 7 8 9 , . ( ) + − × ÷ = € $ ¢ / 0 1 2 3 4 5 6 7 8 9 , . ( ) + − × ÷ = € $ ¢

Superscript
a b c d e f g h i j k l m n o p q r s t u v w x y z

Accented uppercase
À Á Â Ã Ä Ā Ă Å Ǻ Ą Æ Ǽ Ć Ĉ Č Ċ Ç Ď Đ È É Ê Ě Ë Ē Ĕ
Ė Ę FI FL Ĝ Ğ Ġ Ģ Ĥ Ħ Ì Í Î Ĩ Ï Ī Ĭ İ Į IJ Ĵ Ķ Ĺ Ľ Ļ Ł Ŀ Ń Ň
Ñ Ņ Ò Ó Ô Õ Ö Ō Ŏ Ő Ø Ǿ Œ Ŕ Ř Ŗ SS Ś Ŝ Š Ş Ș Ť Ţ Ŧ
Ù Ú Û Ũ Ü Ū Ŭ Ů Ű Ų Ẁ Ẃ Ŵ Ẅ Ỳ Ý Ŷ Ÿ Ź Ž Ż Ə Ŋ Ð Þ

Accented lowercase
à á â ã ä ā ă å ǻ ą æ ǽ ć ĉ č ċ ç ď đ è é ê ě ë ē ĕ ė ę ĝ ğ ġ ģ ĥ
ħ ì í î ĩ ï ī ĭ i į ı ij ĵ ȷ ķ ĺ ľ ļ ł ŀ ń ň ñ ņ ò ó ô õ ö ō ŏ ő ø ǿ œ ŕ ř ŗ ś
ŝ š ş ș ß ť ţ ŧ ù ú û ũ ü ū ŭ ů ű ų ẁ ẃ ŵ ẅ ỳ ý ŷ ÿ ź ž ż ə ŋ ð þ

Accented inuktitut
ᐁ ᐃ ᐅ ᐊ ᐞ ᐣ ᐧ ᐱ ᐲ ᐳ ᐸ ᐹ ᑎ ᑏ ᑐ ᑕ ᑦ ᑭ ᑮ ᑯ ᑰ ᑲ ᑳ ᑴ ᑵ
ᑶ ᑷ ᑸ ᑹ ᑺ ᑻ ᑼ ᑽ ᑾ ᑿ ᒀ ᒁ ᒂ ᒃ ᒄ ᒅ ᒆ ᒇ ᒈ ᒉ ᒊ ᒋ ᒌ ᒍ ᒎ ᒏ
ᒐ ᒑ ᒒ ᒓ ᒔ ᒕ ᒖ ᒗ ᒘ ᒙ ᒚ ᒛ ᒜ ᒝ ᒞ ᒟ ᒠ ᒡ ᒢ ᒣ ᒤ ᒥ ᒦ ᒧ ᒨ ᒩ
ᒪ ᒫ ᒬ ᒭ ᒮ ᒯ ᒰ ᒱ ᒲ ᒳ ᒴ ᒵ ᒶ ᒷ ᒸ ᒹ ᒺ ᒻ ᒼ ᒽ ᒾ ᒿ ᓀ ᓁ ᓂ
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ᖪ ᖫ ᖬ ᖭ ᖮ ᖯ ᖰ ᖱ ᖲ ᖳ ᖴ ᖵ ᖶ ᖷ ᖸ ᖹ ᖺ ᖻ ᖼ ᖽ ᖾ ᖿ ᗀ ᗁ ᗂ
ᗃ ᗄ ᗅ ᗆ ᗇ ᗈ ᗉ ᗊ ᗋ ᗌ ᗍ ᗎ ᗏ ᗐ ᗑ ᗒ ᗓ ᗔ ᗕ ᗖ ᗗ ᗘ ᗙ ᗚ ᗛ
ᗜ ᗝ ᗞ ᗟ ᗠ ᗡ ᗢ ᗣ ᗤ ᗥ ᗦ ᗧ ᗨ ᗩ ᗪ ᗫ ᗬ ᗭ ᗮ ᗯ ᗰ ᗱ ᗲ ᗳ ᗴ ᗵ
ᗶ ᗷ ᗸ ᗹ ᗺ ᗻ ᗼ ᗽ ᗾ ᗿ ᘀ ᘁ ᘂ ᘃ ᘄ ᘅ ᘆ ᘇ ᘈ ᘉ ᘊ ᘋ ᘌ ᘍ ᘎ ᘏ
ᘐ ᘑ ᘒ ᘓ ᘔ ᘕ ᘖ ᘗ ᘘ ᘙ ᘚ ᘛ ᘜ ᘝ ᘞ ᘟ ᘠ ᘡ ᘢ ᘣ ᘤ ᘥ ᘦ ᘧ ᘨ ᘩ
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ᙜ ᙝ ᙞ ᙟ ᙠ ᙡ ᙢ ᙣ ᙤ ᙥ ᙦ ᙧ ᙨ ᙩ ᙪ ᙫ ᙬ ᙭ ᙮ ᙯ ᙰ ᙱ ᙲ ᙳ ᙴ ᙵ
ᙶ ᙷ ᙸ ᙹ ᙺ ᙻ ᙼ ᙽ ᙾ ᙿ   ᚁ ᚂ ᚃ ᚄ ᚅ ᚆ ᚇ ᚈ ᚉ ᚊ ᚋ ᚌ ᚍ ᚎ ᚏ
ᚐ ᚑ ᚒ ᚓ ᚔ ᚕ ᚖ ᚗ ᚘ ᚙ ᚚ ᚛ ᚜

Circled numbers
⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⓿ ❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

Arrows
← → ↑ ↓ ↖ ↗ ↙ ↘ ↔

Dingbats
■ ◆ ● ▶ ▫ ◇ ○ ▷ ◀ ▶ ▲ ▼ ◁ ▷ △ ▽ ◂ ▸ ▴ ▾ ◃ ▹ ▵ ▿ 〈 〉 ^ ˅ ♡ ❤

Pointing indexes
☜ ☜ ☞ ☞

Alternate a (Stylistic set 1)
a à á â ã ä ā ă å ǻ ą æ ǽ

Alternate g (Stylistic set 2)
g ĝ ğ ġ ģ

Nunavik forms (Stylistic set 3)
ᖽᐸ ᖽᐳ ᖽᐱ ᖽᒧ ᖽᒋ ᖽᓚ ᖽᓪ ᖽᓀ ᖽ

	OFF	ON
All caps [CPSP]	Lowercase	UPPERCASE
Case-sensitive forms [CASE]	[Case-sensitive] !¡?¿-–—()[]{}‹›«»·@	[CASE-SENSITIVE] !¡?¿-–—()[]{}‹›«»·@
Standard ligatures [LIGA]	fi fl fb ff fh fj fk ft ffb ffh ffi ffj ffk ffl fft	fi fl fb ff fh fj fk ft ffb ffh ffi ffj ffk ffl fft
Discretionary ligatures [DLIG]	Th ct st sp	Th ct st sp
Historical ligatures [HIST]	Historical	Hiſtorical
Slashed zero [ZERO]	0123456789	Ø123456789
Tabular lining figures [TNUM + LNUM]	H0123456789	H0123456789
Tabular oldstyle figures [TNUM + ONUM]	H0123456789	H0123456789
Proportional lining figures [PNUM + LNUM]	H0123456789	H0123456789
Proportional oldstyle figures [PNUM + ONUM]	H0123456789	H0123456789
Superscript/Superior [SUPS]	Hsuperscript H0123456789 H,.()+–×÷=€$¢	H^{superscript} H⁰¹²³⁴⁵⁶⁷⁸⁹ H^{,.()+–×÷=€$¢}
Subscript/Inferior [SINF]	H0123456789 H,.()+–×÷=€$¢	H₀₁₂₃₄₅₆₇₈₉ H_{,.()+–×÷=€$¢}
Numerator [NUMR]	H0123456789 H,.()+–×÷=€$¢	H⁰¹²³⁴⁵⁶⁷⁸⁹ H^{,.()+–×÷=€$¢}
Denominator [DNOM]	H0123456789 H,.()+–×÷=€$¢	H₀₁₂₃₄₅₆₇₈₉ H_{,.()+–×÷=€$¢}

OpenType features

	OFF	ON
Fractions [FRAC]	1/4 1/2 3/4 0/0 0/00	¼ ½ ¾ ⁰/₀ ⁰/₀₀
Ordinals [ORDN]	2a 2o No N° no n°	2ª 2º Nº Nº Nº Nº
Stylistic set 1 Alternate a [SS01]	Canada	Canada
Stylistic set 2 Alternate g [SS02]	Energy Design	Energy Design
Stylistic set 3 Nunavik forms [SS03]	ᖃᑭᖅᑭᖅᑐᖅᑎᖅᑕᖅᑲᖅ	ᖃᑭᖅᑭᖅᑐᖅᑎᖅᑕᖅᑲᖅ
Stylistic set 4 & 5: Circled numbers [SS04 & SS05]	012345678910 012345678910	⓪①②③④⑤⑥⑦⑧⑨⑩ ⓿❶❷❸❹❺❻❼❽❾❿
Stylistic set 6 Arrows [SS06]	<>+−×÷=±	←→↑↓↖↗↙↘
Stylistic set 7 Dingbats [SS07]	abcdefghij	■◆●▸♡❤☜☜☞

Information

Supported languages	Afrikaans, Albanian, Asu, Basque, Bemba, Bena, Bosnian, Catalan, Chiga, Congo Swahili, Cornish, Croatian, Czech, Danish, Dutch, Embu, English, Esperanto, Estonian, Faroese, Filipino, Finnish, French, Galician, Ganda, German, Gusii, Hungarian, Icelandic, Indonesian, Inuktitut, Irish, Italian, Jola-Fonyi, Kabuverdianu, Kalenjin, Kamba, Kikuyu, Kinyarwanda, Latvian, Lithuanian, Luo, Luyia, Machame, Makhuwa-Meetto, Makonde, Malagasy, Malay, Maltese, Manx, Meru, Morisyen, North Ndebele, Norwegian Bokmål, Norwegian Nynorsk, Nyankole, Oromo, Polish, Portuguese, Romanian, Romansh, Rombo, Rundi, Rwa, Samburu, Sango, Sangu, Sena, Shambala, Shona, Slovak, Slovenian, Soga, Somali, Spanish, Swahili, Swedish, Swiss German, Taita, Teso, Turkmen, Vunjo, Welsh, Zulu
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