

Water Management and FLOOD PREVENTION

Years ago, we would not have been talking about
Climate Change

Flood prevention - water shortage - wild fires or
sea rise of circa 60 metres (200 feet)

There are now circa 68 million people in the UK
In years to come Britain maybe half the landmass

**NOW WE ARE TALKING ABOUT IT
BUT WHAT'S BEING DONE**

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4.1 Conclusion / The Action Plan

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1.1 INTRODUCTION

INTRODUCTION

Back in 1995 the “Open University and BBC Learning Zone” produced a TV program on **calculating volume**.

A Maths Question Was Asked:-

Based on the volume of the ice mass at the North Pole and South Pole...

- **What would be the rise in sea level if the ice melted...**

The Answer:-

- The ice floats on the **Arctic Ocean**. If it melted - **only the weather would be affected...**
- **If the ice covering Antarctica melted, the sea level would rise about 60 meters (200 feet)...**

WATER MANAGEMENT, FLOOD PREVENTION and CLIMATE CHANGE

A Report: Water Management and Flood Prevention - Solutions and Controls to Reduce the Effects of Climate Change.

We all know now that Climate Change is an issue, this report illustrates a few things to think about in order to reduce the impact of sea rise and inland flooding...

ABOUT THE AUTHOR

The Managing Director of an **Industrial Engineering Consultancy**

- In the mid 1980s founded a company in **LEAN Manufacturing and Process Improvement**
- Now been working in manufacturing for over 30 years and in 60 cross-sector companies

A Designer of Factories, Process Improvement and Company Turnaround.

- Working predominantly in the UK, also Czech Republic, France, Netherlands, Ireland, Canada
- **During the last 15 years saving and generating for companies around £12 Million...**

During the period August 2018 – January 2019 worked in the **Netherland's, Arnhem**.

- Project **Company Turnaround** - Process Improvements and **Cost Savings** circa **£2,000,000**

My Job Is To Help People In Business - Improve Their Business... A Trouble-Shooter...

WHY WE NEED TO “CHANGE”

- Google - worldometer - “real time world statistics”.
- Google - the impact of sea level rise UK (images)
- Google - car free cities UK (images).

CLIMATE CHANGE

THE PROBLEM



ROOT CAUSE

“WASTE”



EFFECT

“FLOOD”

2.1 THE PROBLEM - FLOODING

FLOODING

1. The sea IS crashing over the sea walls, flooding coastal towns.
2. Water IS flooding down off the moorland into peoples living room,
3. Farmland IS flooded, cattle stranded and animals drowning,
4. Floods ARE destroying peoples homes and livelihoods.
5. What would be the cost of London under water.....

COUNTING THE COST OF FLOODING.

Flooding is costing the country Billion's of Pounds to repair its infrastructures

- Sandbags and plasters...
- We know these costs because **gov.uk** studied and analysed impacts (like flooded properties and businesses) and used this to calculate the costs of economic damage from flooding.

FLOODS EVERYWHERE

Hereford and Worcestershire - The Somerset Levels
Tenbury Wells and Burford - Eardiston - Tewksbury
Ironbridge - Shropshire - Ludlow - Little Hereford
Mytholmroyd - Snaith - Calder Valley - Yorkshire
YORK - LONDON

- People keep saying ***“you can’t widen streams - you can’t dredge rivers”*** because it will kill the wildlife...
- But the wildlife will die in the floods...

SO: YOU CAN WIDEN STREAMS.....

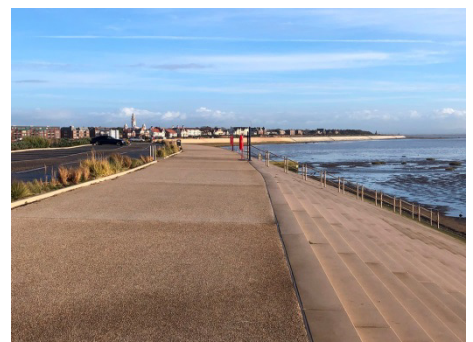


FUTURE PROBLEM

In 2400, 2100 or even 2050 the country could be flooded...

Then what will we do...

What will our Grandchildren say...



2.2 THE PROBLEM - WATER SHORTAGE

DROUGHTS and WATER USE

1. We are told to save water:
 - Hosepipe bans...
 - Flush the toilet only when necessary...
 - Turn the tap off when cleaning your teeth...
2. We are also told to DRINK 2 LITRE OF WATER A DAY...

CONFLICTING ARGUMENTS I THINK !!!!

But how come there is a water shortage - when we keep having floods...

➤ *Oh yes, the water is in the wrong place...*



FUTURE PROBLEM

The population is growing,
**70 babies are born every hour in the UK,
circa 600,000 per year**

The current population of the UK is **68,361,530**
as of Tuesday, November 2, 2021, based on **Worldometer
real time world statistics.**

WORLD WIDE PROBLEM

Lack of Investment all over the World is causing migration
from Asia... To the EU & UK

World Population November 2021 - 7,874,965,825

World Population Projections 2023 - 8,031,800,429



A Lack of World Wide Investment
is now putting a strain on all
UK resources.

SO:- What is the solution for UK Water Management ?

THE SOLUTION and Water Management



3.1 THE SOLUTION - SEA FLOOD DEFENCES

PROBLEM - COASTAL FLOODING

- *"We can't win a war against water by building away with infinitely high flood defences".*
- *"The Climate Emergency demands a different philosophy for dealing with flooding and coastal change".*

If all the ice covering Antarctica, Greenland, and the mountain glaciers were to melt, the sea level would rise about.....

70 meters (230 feet).

The ocean would cover many coastal cities...
Including Liverpool, Norwich, LONDON, Cardiff...

Fairbourne – may be the first Welsh coastal village to be lost due to climate change .



Will Harlech Be Next

SOLUTION - JUST AN IDEA

"BUILD SEA DEFENCES"

- **Build Out Into the Sea** - To protect our towns and villages - So they DO NOT fall into the sea...
- Build defences using the sand from the sea...
- Build using fallen rocks from the land...

Building Out Into The Sea



Rhos-on-Sea, North Wales.

They Have Used The Defences To Their Advantage – It's A Thriving Seaside Town...

Rhos-on-Sea, North Wales



Fairbourne – Barmouth - Harlech

New Investment could bring:

1. Coastal Defences with Electricity Generation
2. Wild Life Nature Reserves
3. A Yachting Harbour
4. Seaweed Farming
5. 101 ideas...

Bringing investment & cash to the towns...

3.2 THE SOLUTION - COASTAL LAND RECLAMATION

PROBLEM - COASTAL EROSION

“WHY ARE WE ALLOWING OUR COAST-LINE
AND OUR VILLAGES TO COLLAPSE INTO THE SEA” ?
Wasting Millions of Pounds...

If it was LONDON - Something would be done, very quickly...

SOLUTION - JUST AN IDEA

“COASTAL LAND RECLAMATION”

BUILD OUT INTO THE SEA.

- Transfer sand from the sea bed, back onto the land...
- Build New Sand Hills and New Beaches...



CREATE NEW JOBS:

1. Build Defensive Flood Zones
2. Build WET LANDS For Wild Life
3. Build New Beaches for everyone
4. Build New Coastal Roads on reclaimed land
5. Build Seaweed Farms (absorb CO2 - release oxygen)
6. Build Container Ports - Coastal Airports - Wave Power....

COASTAL RE-GENERATION

The Netherlands - land taken from the sea
This is Rotterdam - new container port



- ✓ Build using the Rocks from the cliff face
- ✓ Build using the Sand from the sea
- ✓ Build higher – protect from sea rise...



3.3 THE SOLUTION - WATER MANAGEMENT

WATER

Every year we get floods -

Every year we get moorland fires -

Every year we get drought warnings. **why? We talk about it - but nothing gets done...**

Why do we allow this to happen every year

- Displacing families
- Destroying jobs
- Killing wildlife
- **Costing million's of pounds to repair.**

SOLUTION - WATER MANAGEMENT

1. Build new reservoirs and forests - like Kielder,

1. To capture water for drinking
2. To create nature reserves
3. To create recreation facilities
4. Trees **absorb** carbon dioxide and **release** oxygen



2. Build moorland water capture storage reservoirs, (Oldham)

1. To capture water for drinking
2. To create recreation facilities
3. Water to put moorland fires out
4. To prevent our towns and villages from flooding



3. Allow farmers to construct reservoirs on their farmland,

1. To capture water when it rains
2. To prevent rural villages from flooding
3. To irrigate crops and control the water flow
4. To save Millions of Pounds on insurance claims

4. Straighten and widen streams and rivers by dredging,

1. To prevent rural villages from flooding
2. To irrigate crops and control the water flow
3. To secure wild life habitats for future generations
4. To use the waterways for transporting drinking water.
5. To use the waterways for transporting goods...



3.4 THE SOLUTION - MOORLAND WATER CAPTURE

Mytholmroyd Yorkshire in February 2020

- Hundreds of lives disrupted... Wildlife Drowned...
- **How much did it cost to repair ?**
- Yes high walls were required - but what if they didn't need to be there in the first place...



This is Mytholmroyd with New Higher Walls - Nov 2021

SOLUTION - MOORLAND WATER CAPTURE

Build Moorland Water Capture Reservoirs

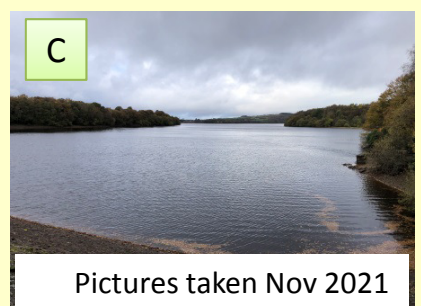
1. To capture water for drinking
2. To create recreation facilities
3. Water to put moorland fires out
4. To prevent flooding of our towns and villages...

This is Belmont Moor (BOLTON Gtr Manchester) A-B-C

- **Constructed** between 1850 and 1857.
- Designed by Thomas Hawksley the well known 'three lakes' of **Anglezarke reservoir**, Upper and Lower **Rivington reservoirs** ... together with **Yarrow reservoir** were once the cutting edge of reservoir technology...

- A. Water floods off Belmont Moors and into the reservoir (**A**)
- B. When the reservoir is full the water flows down (**B**)
- C. It flows into a second and third reservoir. (**C**)

➤ It "**probably**" stops flooding of Horwich and Bolton...



Pictures taken Nov 2021

THE ACTION PLAN and THE FIGHT BACK

WE CAN HAVE OUR CAKE AND EAT IT...



4.1 CONCLUSION – ACTION PLAN

SOLUTION / RECOMMENDATIONS

As an Industrial Engineer and Business Improvement Consultant - I see the problems - I also see solutions... All we need is to “Think Outside The Box”... To Fight Back...

- The weather does not respect... Nationality – faith – gender – money - rules - EU law...
- When the Earth is under water... Are we going to say **“EU Law says we can’t do that”**
- What are we going to tell our children... Are we going to say **“We can’t afford it”**

1. **FORM A RESCUE TEAM ... Engineers / Developers / Investors**
2. **SET UP A WORLD WIDE ... Climate Change Rescue Fund...**

- ✓ We need to learn from The Netherlands...
- ✓ We need to learn from the Victorian Engineers...
- ✓ We have the technology... Let’s Start “The Fight Back”...

Are we the “Last Generation To Do Nothing”

Or are we the generation to do something...

To create clean growth and a clean Earth for our children's children...

Governments just talk – DOING SOMETHING WILL BE REMEMBERED...

	CONTINUOUS IMPROVEMENT - ACTION LIST	CHAMPION
1	Set up a “Climate Change Rescue Team” (Engineers & Developers)	
2	Set up a “Climate Change Rescue Fund” (Governments / Investors)	
3	LOOK at the “ROOT CAUSE” - Not at the “EFFECT”	
4	BUILD – Sea Defences - Build OUT Into The Sea... (ref 3.1)	
5	BUILD – Coastal Land Reclamation - Build OUT Into The Sea... (3.2)	
6	BUILD – Coastal Regeneration (Think outside the box) (3.2)	
7	BUILD - Reservoirs and New Woodlands - like Kielder (ref 3.3)	
8	BUILD – Moorland Water Catchment & Storage Reservoirs (ref 3.4)	
9	BUILD – Low-land Water Catchment Reservoirs – Respect The Farmers	
10	DREDGE – Straighten And Widen Streams And Rivers – Respect Wildlife	
11	PLANT – More Trees Upstream - But Respect The Hill Farmers	
12	THINK OUTSIDE THE BOX - FIND NEW SOLUTIONS - IMPLEMENT	