

David Brady, Tierlahood, Stradone, Co. Cavan

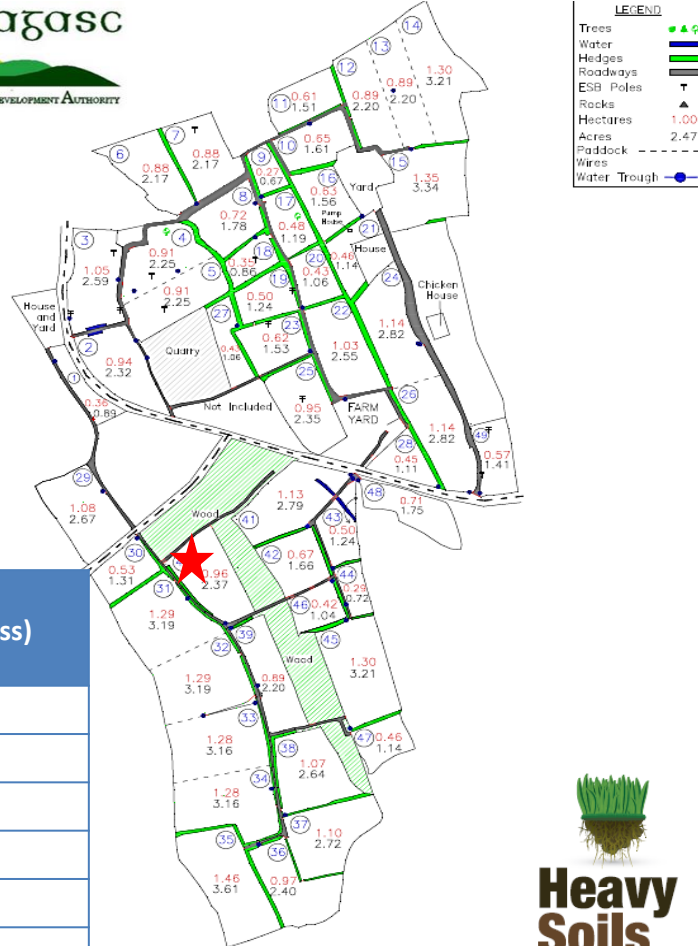


Key Farm Drivers:

- Profit €€€
- Optimize grass in diet
 - Soil Fertility, Drainage & Reseeding
- Grass Measuring
- Silage Reserves – weather related
- High EBI Friesian (Fertile Herd)

Farm Characteristics

- Family Farm
- Intensive Free Range Layer Enterprise
- High Altitude (180 m) / Rainfall (1100mm)



Year	Cows No's	Farm SR - LU/ha (Milking Platform)	Milk Solids/ha (Milk Solids/cow)	Grass Grown (T DM/ha) (Days at Grass)
2013	75	1.43 (2.34)	978 (417)	N/A
2014	72	1.49 (2.25)	910 (404)	N/A
2015	81	1.80 (2.53)	1048 (414)	8.5 (245)
2016	82	1.62 (2.10)	881 (420)	9.5 (249)
2017	81	1.65 (2.03)	867 (427)	11 (255)
2018	100	2.03 (2.50)	1050 (420)	12 (270)

David Brady – Farm Infrastructure

INFRASTRUCTURE	ADEQUACY		
	Good	Adequate	Needs Attention
Grazing			
Paddock Size			X
Farm Roadways	X		
Water troughs	X		
Milking parlour			
No. of rows	X		
Collecting Yard		X	
Drafting			X
Farmyard			
Slurry Storage		X	
Silage Slab	X		
Cubicle Spaces			X
Head Feed Space			X
Calf Facilities		X	
Calving Facilities		X	

5 Steps to Improving Soil Fertility

Soil Fertility Summary: Brady's Farm

Information

1) Soil Test

Interpretation

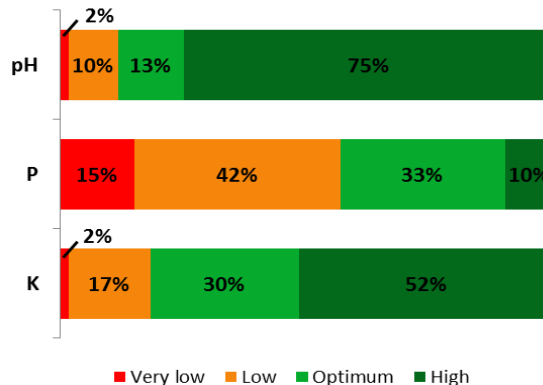
2) Soil pH & Lime

3) P & K Index 3

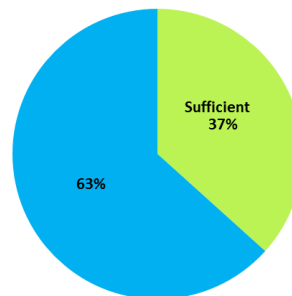
Index	Description
1	Very Low
2	Low
3	Target
4	High

4) Slurry

5) NPKS Balance



Percentage of soils
with sufficient soil
pH, P & K



Land Drainage Design

Problem Diagnosis



Soil Test pits (at least 2.5m deep)

- Design varies with soil type
- Water enters in permeable layers
- Other layers need help

Groundwater Drainage System



Tapping into permeable layer

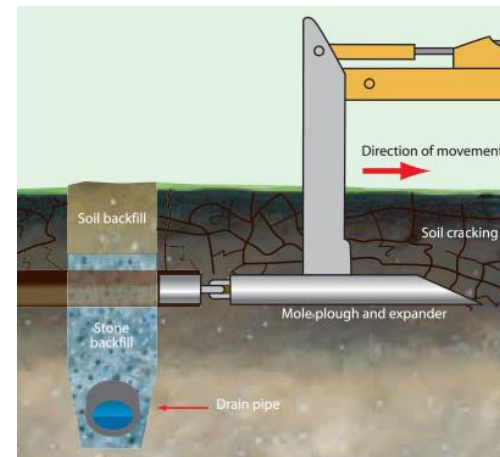
Conventional or deep pipe drains:

- Where a permeable layer will transmit water
- Where water can percolate to watertable
- Most effective way to discharge water

Shallow Drainage System

Mole/Gravel Mole drain/Subsoiling:

- Aim to fracture and crack the soil
- Effectiveness dependent on:
 - Soil clay/stone content
 - Implement used
 - Weather conditions
- In tandem with collector drains

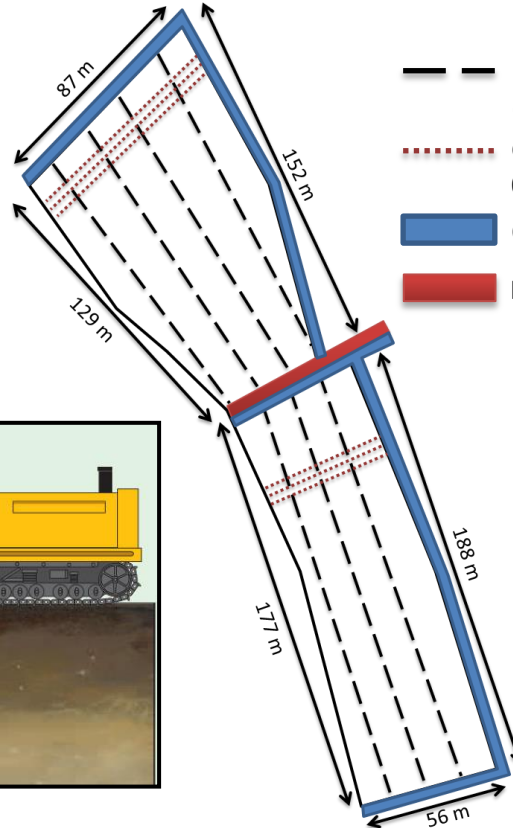


David Brady- Land Drainage Design

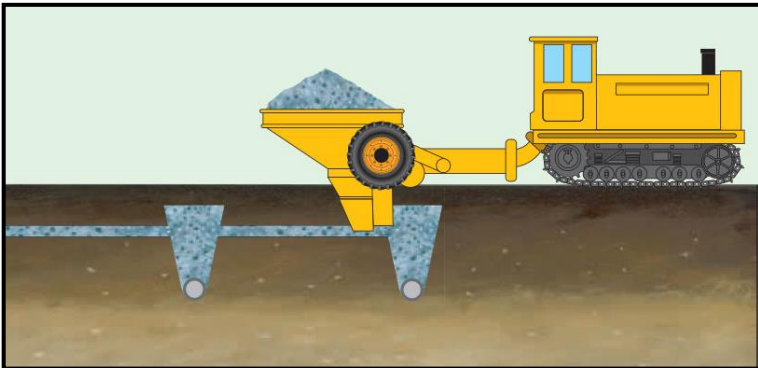
Shallow Drainage System

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- Aim to fracture and crack the soil
- Effectiveness dependent on:
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 - Implement used
 - Weather conditions
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- Field drains:
0.9 m depth, 15-20 m spacing
- ... Gravel mole drains:
0.45 m depth, 1.5 m spacing
- Open drain
- Roadway



David Brady – Drainage Costs

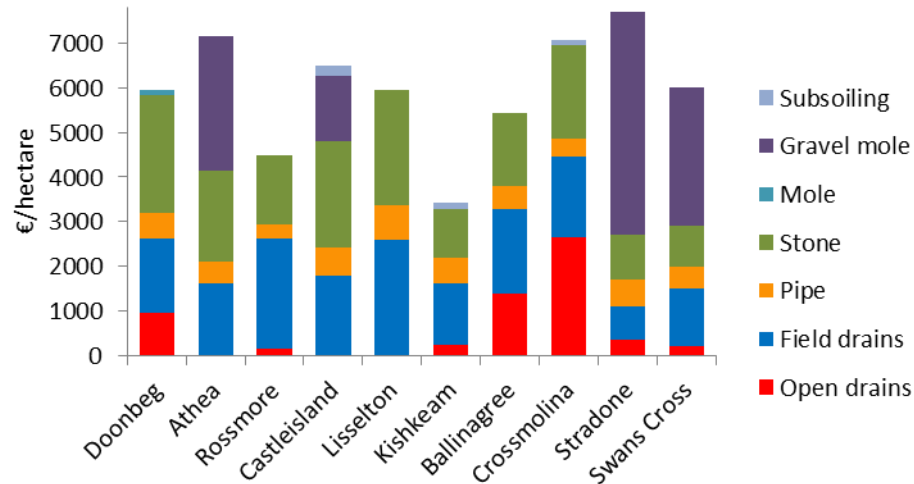
Key points:

- Soil investigation
- Site appraisal
- Drainage system design

Costs

Total/ha

Open drain installation @ €35/hr (10hrs)	€355
Field drain installation @ €35/hr (22 hrs)	€765
Drainage pipe @ €1.00/m (595 m)	€595
Drainage stone @ €11.68/t (86 t)	€1,000
Gravel Mole Installation	€2,275
Gravel Mole stone @ €12.30/t (219 t)	€2,690
Drainage cost	€7,680



Decision process:

- Soil fertility
- Farm roadway and water Infrastructure
- Ryegrass pasture
- Drainage