

Introduction to Sustainable Infrastructure Practice Group



PM Foundation Course
November 2014
Copenhagen



Richard Lorenz
Training and Professional Development
Specialist
Sustainable Infrastructure Practice Group
richardlo@unops.org
infrastructure@unops.org



Sustainable Infrastructure

Session Aims:

Introduction to the SIPG practice, the latest initiatives and mandatory roll outs.

Objectives:

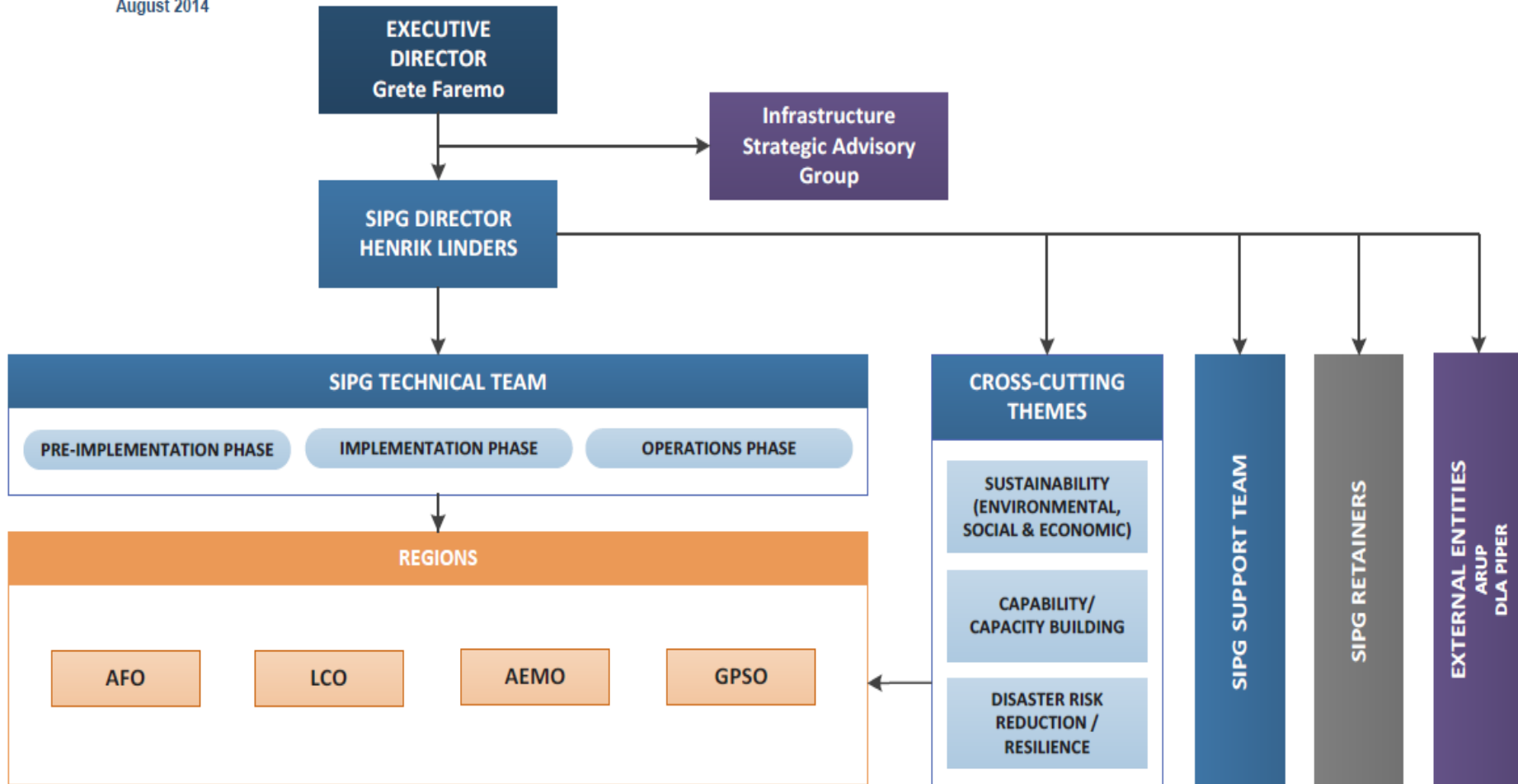
After the session the participants will be able to

- Give examples of sustainability in infrastructure
- Describe different areas that UNOPS specialises in infrastructure
- Describe the main reasons for the mandatory roll outs.
(EMS, H&S, FIDIC, Design Review)
- List support offered by SIPG and where to go for more information.

Who We Are

SIPG ORGANOGRAM

August 2014



Objectives of SIPG

- Provide support to regional/country offices in business development and implementation.
- Build partnerships with other UN agencies, donors and key players.
- Promote sustainability in all aspects of infrastructure work.
- Bring industry standards to development.
- Set corporate best practice in the infrastructure field.

Infrastructure: General Overview

Infrastructure figures in 2013

- \$338M expenditure in infrastructure
- 3, 564 km of constructed or rehabilitated roads
- 81 bridges designed & constructed
- 49 schools designed & constructed
- 40 administrative buildings
- 14 hospitals, 24 health clinics
- 7 police stations, 7 courthouses, 7 prisons
- 45 agricultural storage facilities, 20 irrigation systems
- 33 water treatment plant, 44 wells drilled, 30 pump and tanks



Infrastructure Sectors

Buildings	Transport	Power	Utilities		
			ICT	Water and Sanitation	Waste
Educational Facilities	Roads	Power Generation	Telecom Services	Water Supply Networks (WASH)	Waste Disposal Facilities
Health Facilities	Bridges	Power Transmission	ICT Solution	Water Sourcing	Waste Collection & Separation System
Buildings for Rule of Law	Ports and Harbours	Power Distribution		Treatment & Distribution networks	
UN Buildings	Coastal Works	Power Storage and Support Facilities		Maintenance & Operations	
Public Realms Facilities	Air Transport			Flood Control and Drainage	Waste Processing Facilities
Storage Facility/ Industrial Zones	Railroads			Irrigation Systems	Facilities/ Utilities Specific Solutions
Accommodation Facilities	Under grounds Works			Waste Water (WASH)	
				Water resources management	

Cross Cutting Areas

Infrastructure Sectors					
Buildings	Transport	Power	UTILITIES		
			ICT	Water and Sanitation	Waste

Cross cutting

**DRR/CCA/
Resilience**

**Risk reduction
Preparedness
Rehabilitation & recovery**

National Capacity and Capability

Social

Environmental

Financial & Economic

How?

Separate Service Streams

Feasibility/Assessment

Design

Construction

Operation & Maintenance

Buildings

Transport

Power

Utilities- ICT

Utilities- Water and Sanitation

Utilities- Waste

Define UNOPS Role

Define UNOPS Liabilities

Define Specific Contract Modalities

Define Systems, Process, Support

Gaps in current processes and supports

Complex links to define
Legal, Proposal, MoU

A blue, multi-pointed starburst graphic with a white outline, containing the word "EXERCISE" in white, bold, uppercase letters.

EXERCISE

Write down a Sustainable Infrastructure Project that you have experience of.

Choose one example within your group, Discuss

1. What roles were undertaken at different stages of the project.
2. When was Infrastructure specialist advice taken?
3. What could be improved next time?

SIPG Potential Direction for 2015

- ***Personnel: getting the right people in the right place***
 - SIPG Presence
 - Recruitment support
 - Leadership

- ***Process & Systems***
 - System of Works Contracts & Contract Management
 - ISO certifications – Environment and Health & Safety

- ***Technical Guidance***
 - Technical standards
 - Software licenses
 - Infrastructure project library
 - Handbook for infrastructure service implementation
 - Guidance / Design Manuals – for buildings; civil works; rule of law; hospitals

- ***Other***
 - High Risk Infrastructure Assessment
 - Infrastructure Assessment methodology
 - Disaster risk reduction & resilience
 - Support Green technology

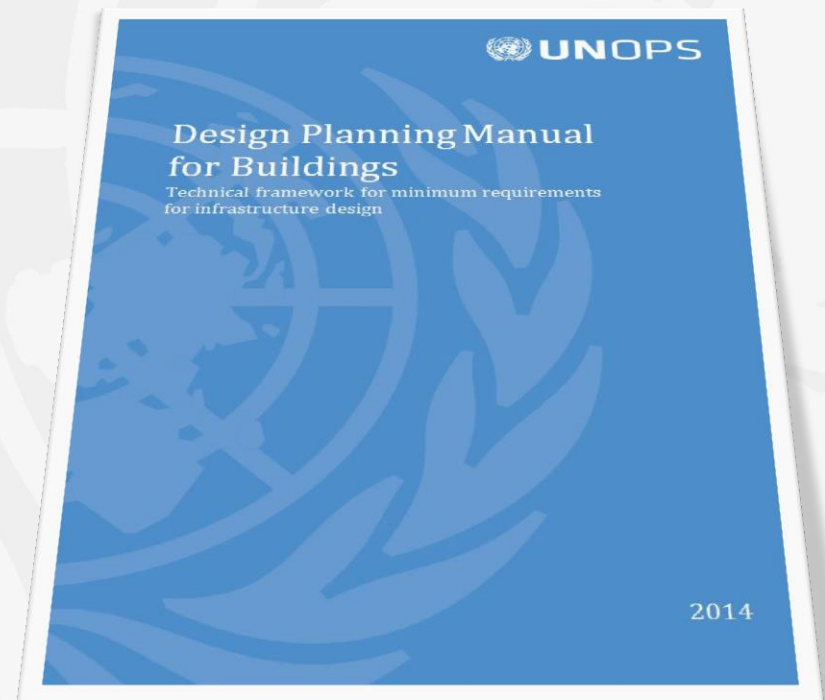
SIPG Initiatives going forward...

- Design Planning Manual for Buildings, Civil Works & Transport
- Prisons Manual – minimum standards for treatment of prisoners
- ISO 14001 Environmental Management System
- OHSAS 18001 Health and Safety
- New contracts – Design and Build, Design Consultancy services
- Infrastructure Assessment Project
- Cross practice DRR/CCA/ Resilience unit
- Works contract management system
- Training, Talent Management and Professional Development
- LTAs with Engineering Service Providers: e.g. Arup, DLA Piper

Design Planning Manual

What is the Design Planning Manual for Buildings, and why is it relevant to my work?

- Design Planning Manuals set out the **mandatory** UNOPS guidelines and performance requirements for the design of infrastructure
- They promote the delivery of quality infrastructure that is **safe and functional**
- Project managers, procurement practitioners, and design practitioners all have **specific responsibilities to fulfill**



How is the Design Planning Manual relevant to my work as a Project Manager?

Procurement of the design

- PM's responsibility to ensure that a suitable design is formulated and approved.
 - ✓ A common pitfall is to underestimate the time it takes to identify and engage an appropriate Design Practitioner.
- Design issues and implications should be discussed with relevant stakeholders.

Design review

- Required to ensure that the proposed design meets UNOPS minimum performance requirements.



How is the Design Planning Manual relevant to my work as a Project Manager?

Extent of review

- The necessary level of review is determined by a **risk assessment** of the planned infrastructure
- Designs for low risk infrastructure can be reviewed by a **certified peer reviewer**. Designs for medium and high risk infrastructure require a third party review, administered by SIPG
- Revisions to a design may be necessary as a result of the design review process

How is the Design Planning Manual relevant to my work as a Project Manager?

Review considerations

- Cost of review is **carried by the project**
- Be sure to **allow enough time and resources** for both the design and the design review process
- In all cases, the **design liability remains with the designer**

Keep in mind!



- The **requirement for Design Review carries significant implications** for the work of project managers, and procurement and design practitioners
- Renovation and repetitive works require additional considerations, as do projects of special significance
- **Detailed guidance and instructions** for project managers, peer reviewers and design practitioners can be found in the relevant Design Planning Manual; instructions for procurement practitioners can be found in the Procurement Manual
- A training program is in place to ensure that the content and the implications of the manual is understood

Environmental Management System (EMS) & Health and Safety (H&S)

Key commitments in the UNOPS EMS Policy

- Prevent, minimize and remedy adverse impacts
- Prevent pollution by adopting sound environmental practices
- Commitment to continual improvement
- Comply with legal and other requirements

Certificate GB13/89170

The management system of

United Nations Office for Project Services UNOPS

Marmorvej 51, 2100 Copenhagen O, Denmark
Jerusalem Project Centre, Aiam Building (Near New Rosary Sisters' School),
Beit Hanina, PO Box 55157, Jerusalem, 91192

has been assessed and certified as meeting the requirements of

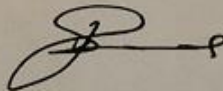
ISO 14001:2004

For the following activities

The provision of implementation services for the planning, design and construction management of physical infrastructure projects to partners working in peacebuilding, humanitarian and development operations.

This certificate is valid from 13 August 2013 until 26 June 2016 and remains valid subject to satisfactory surveillance audits.
Re certification audit due before 23 May 2016
Issue 2. Certified since 26 June 2013

Authorised by



SGS United Kingdom Ltd. Systems & Services Certification
Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK
t +44 (0)151 350-6666 f +44 (0)151 350-6600 www.sgs.com

SGS EMS 04 0311

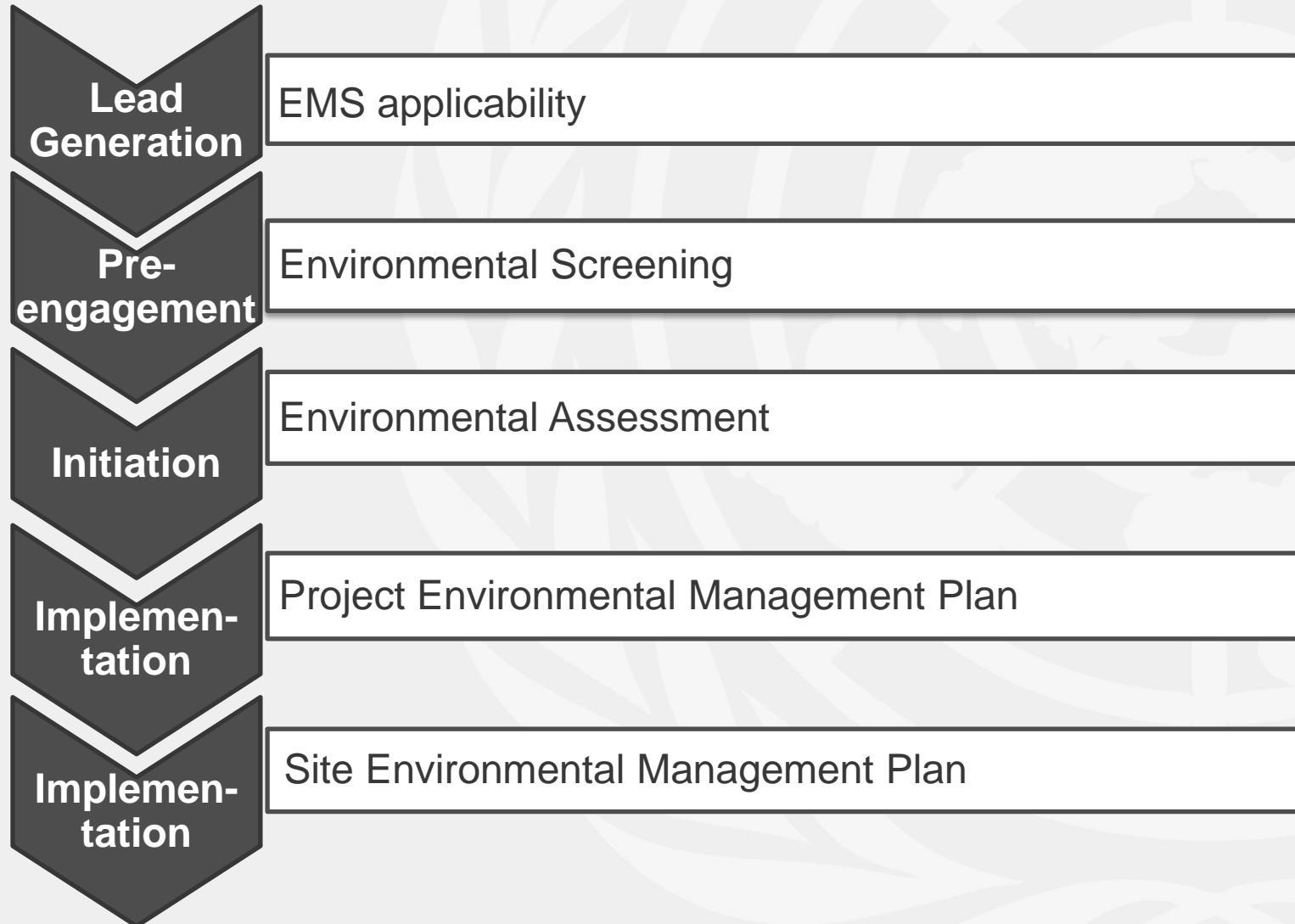
Page 1 of 1



- SIPG HQ, Pristina, Jerusalem, Afghanistan Sri Lanka and Guatemala are ISO 14001 certified
- Pristina and Jerusalem are ISO 18001 certified

...our next goal is to maintain the certifications and to add additional countries.

UNOPS EMS at different stages of project development



Key requirements of EMS and H&S is to:

- Produce the Environmental Management Plan for the project and to produce the Health and Safety plan
- Manage the project according to the plan to ensure control of Environmental and Health and Safety Risk.

Guidance Available

- Templates and examples of plans and other useful forms
- General guidelines that can be customised to meet a particular project's requirements
 - Oversight and guidance for country office and specific offices in line with meeting requirements of EMS and HS system and in meeting certification requirements for ISO 14 001 and OHSAS 18 001.
 - EMS & Implementation Manuals:
Implementation, Health and Safety. Environmental Manual

UNOPS FIDIC – Based Contracts

Infrastructure Resources

Construction contracts

The main platform around which the process of managing works takes place is the Contract for Works. It spells out:

1. UNOPS obligations and expectations
2. Contractors obligations and expectations
 - What is it
 - When do we want it
 - How we will inspect it
 - How we will pay for it
 - Controls for unknowns
 - Risks – who holds what risk
 - Defects and liabilities
 - Dispute mechanisms
 - Termination conditions



Do not file it in the bottom draw until a problem arises

One contract – one document

The Contract for Works is one document

- Instrument of agreement
- General Conditions of Contract
- Particular Conditions
- Schedules

One procurement

- Value of the known works
- The contingency sum (new mechanism for variations)

Managed with professional judgement

ONE DOCUMENT
Section 1: Signed Documents
Section 2: GCC (NEVER changed)
Section 3: Particular Conditions (ALWAYS Legal clearance)
Section X: Schedules (before ITB is issued)

UNOPS FIDIC-based Contracts



**Minor Works
Contract
(Green Book)**



Most basic of works
and contractors with
low capacity



**Short Form
Construction
Contract
(Green Book)**



Undertake relatively
basic and routine
construction works



**Measured Price
Construction
Contract
(Red Book)**



Complex works to
be paid on a
measured price
basis



**Lump Sum
Construction
Contract
(Red Book)**

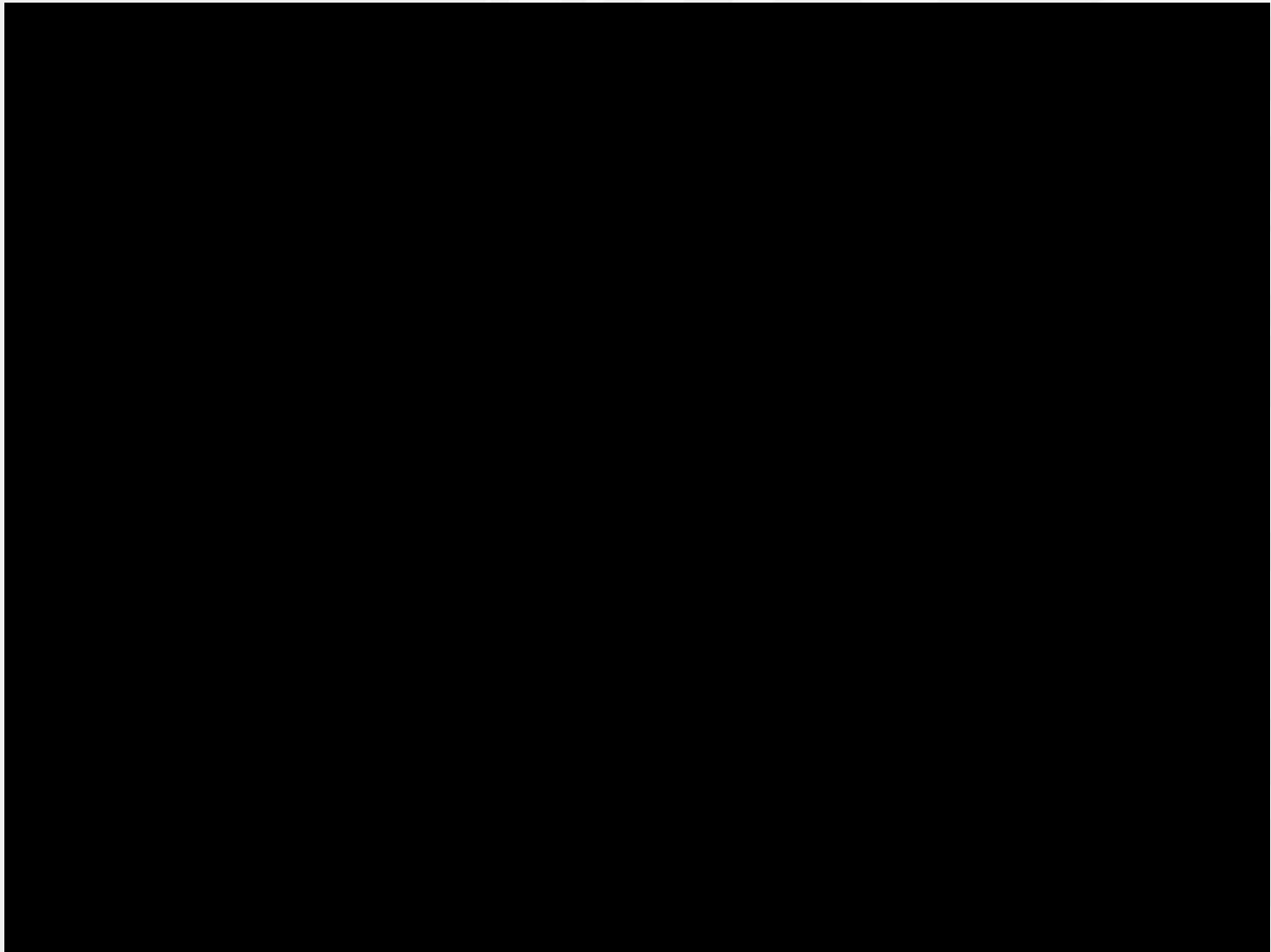


Complex works to
be paid on a lump
sum basis

Increasing size of contract

UNOPS is also in the process of developing a design-build (Yellow Book) and a client/consultant (White Book) contract templates.

Ways SIPG can support

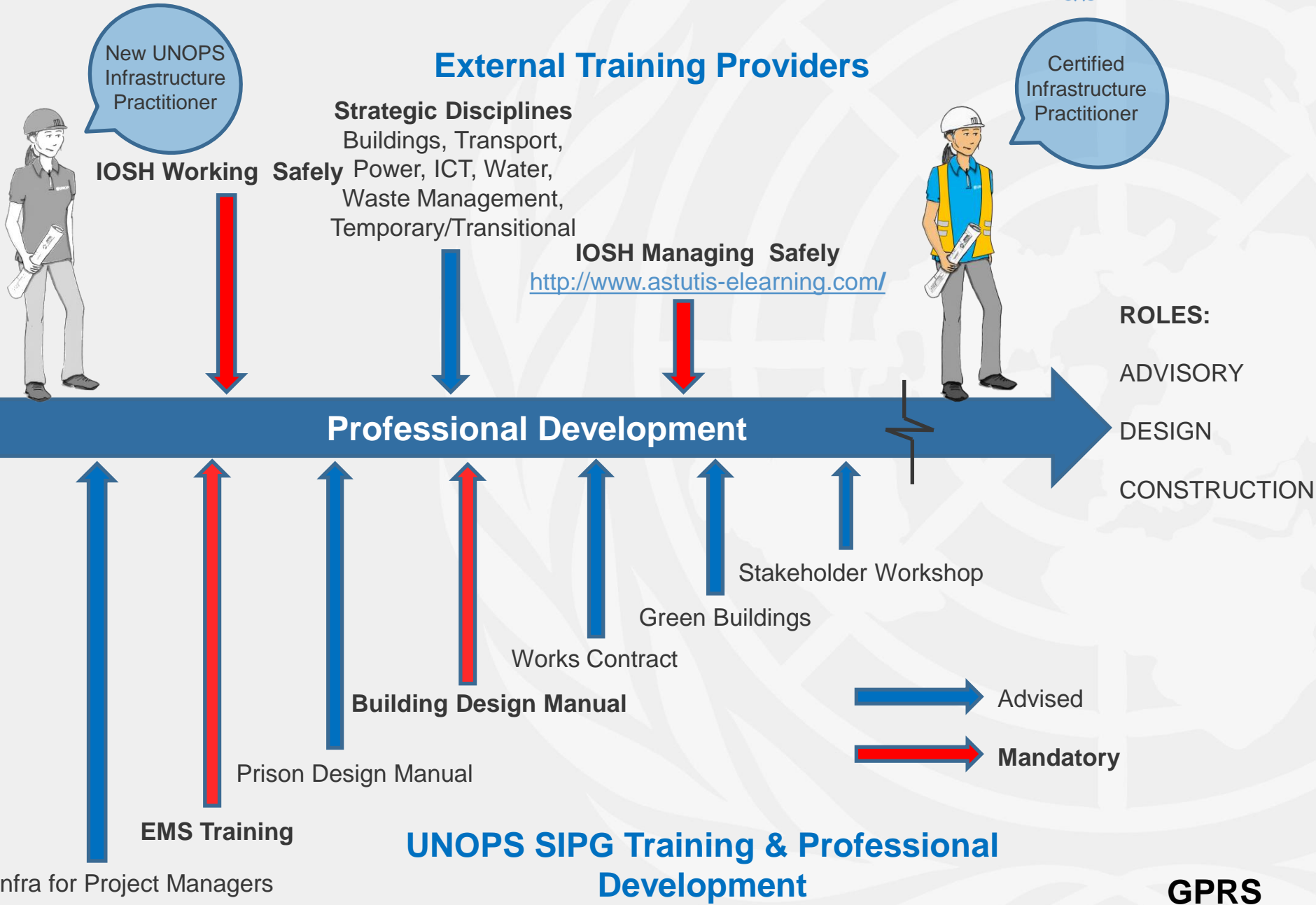


More about SIPG and UNOPS infrastructure

- **Contact:**
infrastructure@unops.org
- **Discuss infrastructure:**
COP for Infrastructure
- **Download resources on the SIPG Intranet**
- **Monthly newsletter:** Sent to COP for infrastructure, procurement and PM



<https://intra.unops.org> → practices → infrastructure



**ENVIRONMENTAL QUALITY
CONSIDERATIONS DESIGN**

**GENDER SENSITIVE
DESIGN ENERGY**

RENEWABLE

ENERGY EFFICIENCY

**MAINTENANCE AND
OPERATIONS**

OCCUPATIONAL

**HEALTH &
SAFETY**

**MORE SUSTAINABLE
INFRASTRUCTURE**

USABILITY

QUALITY CONSTRUCTION

**WHAT IS SUSTAINABLE
INFRASTRUCTURE?**

RISK REDUCTION

AND RESILIENCE

COMMUNITY MATERIALS

INVOLVEMENT CHOICE OF

