



**Introduction to Building Information Modelling (BIM) in
procurement procedures**
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*From works contracts to collaborative contracts:
the challenges of BIM in public procurement*

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Building networks... and COMMUNITIES OF PRACTICE



Ted Ambassador Award, Publication Office



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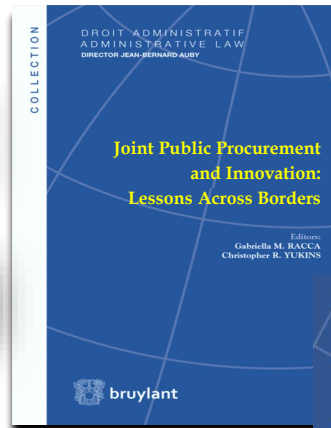
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Contrôles et contentieux des contrats publics
Oversight and Challenges of public contracts

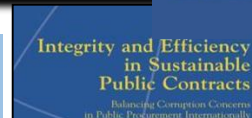
<https://publicprocurementinternational.com/oversight-and-challenges-of-public-contracts/>

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<https://publicprocurementinternational.com>

<https://publicprocurementinternational.com/joint-public-procurement-lessons-across-borders/>



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OPEN CONTRACTING PARTNERSHIP

Integrity – Joint – Digital – Digital Joint – Digital Integrity...

**From Dematerialisation to Digitalisation of Public Contracts:
a Research Project**

Building Information Modeling - BIM

innovation of PROCESS, METHOD and TOOLS OF DESIGN AND MANAGEMENT OF THE PROCUREMENT CYCLE AND THE CONTRACT EXECUTION AND MANAGENET

**REQUIRED
Quality**

**PROMISED
Quality**

**OBTAINED
Quality??**

Clear Demanding Framework

Award phase

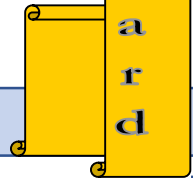
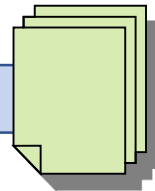
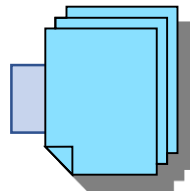
Execution phase

PROGRAMMING

DESIGN

Evaluation of
tenders

**A
w
a
r
d**



Less REBATE OF PRICES

Less CONTRACT AMENDMENTS

- *MONITORING of all phases*
- *INTEGRITY and EFFICIENCY*
- *REDUCTION of LITIGATION*

What is BIM?

Building Information MODEL

Object: *digital representation of the physical and functional characteristics of a building, made up of digital objects to which all the relevant information is attributed*

Building Information MODELING

Methodology: *set of all collaborative processes of creating and using an electronic model of a building*

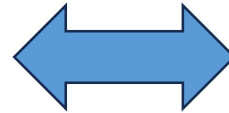
Building Information MANAGEMENT

Management and control tool: *use of the digital model for sharing information between all subjects involved in the entire life cycle of an asset*

From works contracts to collaborative contracts: the challenges of BIM in public procurement

**Traditional relationships in PUBLIC CONTRACTS:
OPPOSING PARTIES**

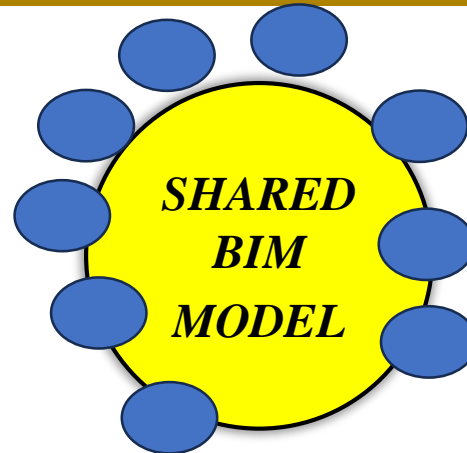
**Public Demand
Public Side**



**Economic Operators Offers
Private Side**

BIM allows Parties to overcome the conflicts and:

- **INFORMATION ASYMMETRIES**
- **OPPORTUNISTIC BEHAVIORS**



**Collaborative and integrated processes with *BIM*
(*Framework Alliance*)**

BIM enhances legal and operational frameworks by **improving collaboration** among diverse project stakeholders. This results in **better coordination** and a **reduction in project modifications**, which are crucial within legal frameworks of alliances and cooperation.



It addresses the legal aspects by providing a reliable data infrastructure that supports open and reusable data, which is essential for



TRANSPARENCY

COMPLIANCE

COMPLIANCE



public procurement cycle

From works contracts to collaborative contracts: the challenges of BIM in public procurement

Advantages for Contracting Authorities:

- Increase **building performance**
- *Reduce financial risk*
- Reduce project completion **times**
- *Obtain accurate and reliable cost estimates*
- Ensure **project compliance**
- *Optimize management and maintenance*

From works contracts to collaborative contracts: the challenges of BIM in public procurement

Advantages of use for **Architects and Engineers:**

- **Consistency** between documents
- *Better ratings with model-based surveys*
- Integration of **engineering services**
- *Automatic cost estimation*
- **Construction** site analysis and interference resolution
- *Clash detection*
- **Code checking**

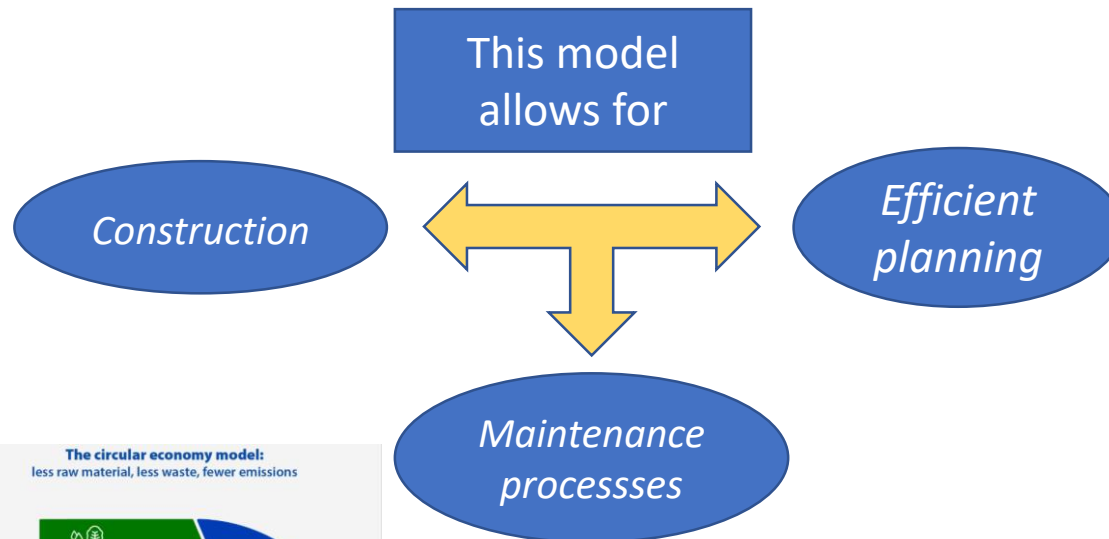
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Advantages of use for **Economic Operators**
and **Subcontractors**:

- **Interference** reduction
- *Integration of times in the model*
- Determination of quantities and estimated **metric calculations**
- *Analysis of first level construction and programming*
- Better **planning, construction** and **construction site analysis**
- *Verification of the project before construction*
- **Coordination** with other process actors/systems

Evolving Public Procurement: Leveraging BIM for Collaborative Contracting

BIM supports the shift towards more collaborative contracts in public procurement by enabling a standardized digital information model.

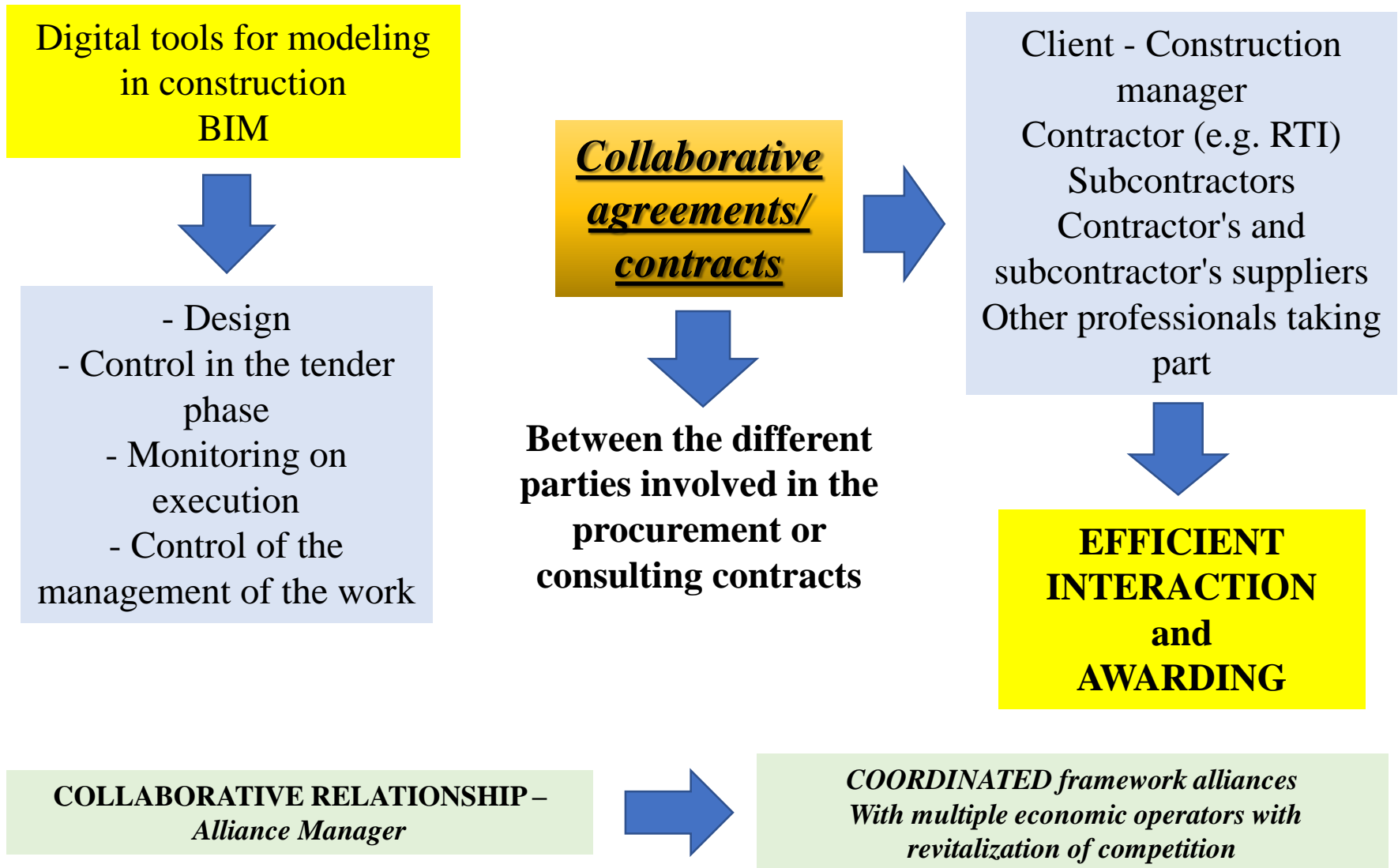


Promoting
circular
economy –
reducing
waste
management



The collaborative nature of BIM fosters a dynamic environment where **early warning, risk management, and clash detection** are systematically integrated into the contract management strategy.

SMART PUBLIC CONTRACTS



Types of collaborative contracts

Integrated Project Delivery (IPD):

In IPD, owners, contractors, and engineers are integrated into a single contract

Risk allocation

Partnering: all parties agree to work together ... separate partnering agreement alongside the main contract

Less formal

Alliance Contracting: single contract...

Managing Contractor: the contractor takes on a managerial role for subcontractors and ensuring that the project is completed on time and within budget.

Evolving Public Procurement: Leveraging BIM for Collaborative Contracting



Information Management Offer

Document of an operational nature (together with the information specifications and the management plan) which is drawn up during the tender phase to complete the required technical-economic documentation. It is developed by the bidders to describe the technical, organizational and economic proposal of the BIM project.

Information Management Plan

The BIM Execution Plan (BEP) is a functional document for the correct management of a BIM order and for the synchronization of the workflow, from project planning to construction management. Its purpose is to: provide guidelines on level of definition (LOD) management and information management in BIM; help the work team identify their roles.

BIM and BLOCKCHAIN

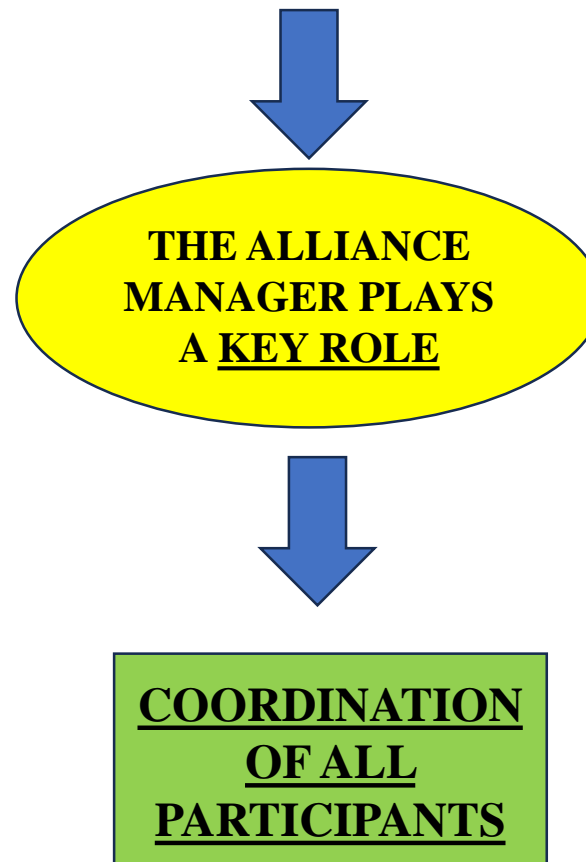


BIM and BLOCKCHAIN ensure greater publicity and transparency, in the sense of clear and reversible tracing of all steps.

In the definition of blockchain there is the input to understand the transition from stand-alone systems to collaborative and integration systems, for a more effective responsibility of Parties involved.

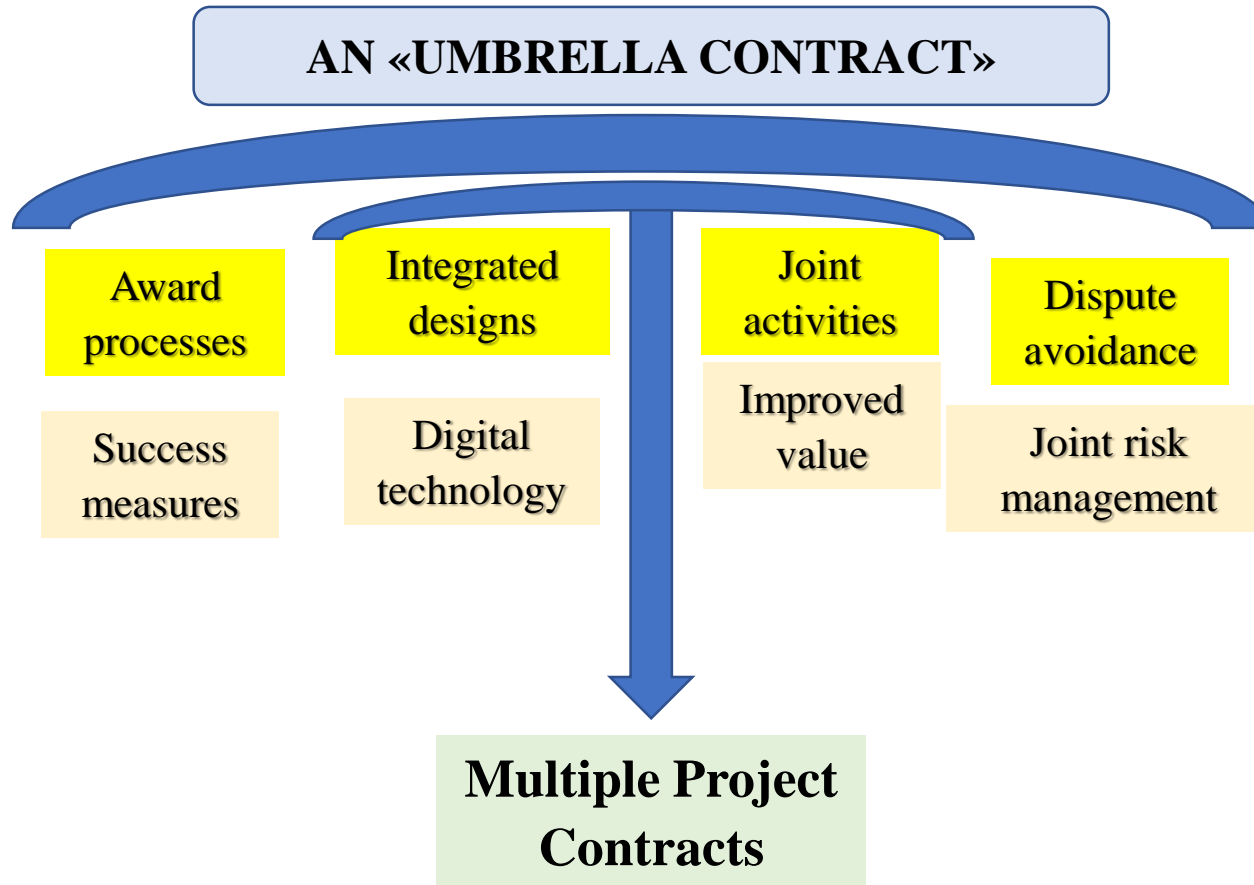
The Importance of the Alliance Manager in Collaborative Contracts

Since project success is closely linked to the establishment of **collaborative relationships**, the identification of a “**GROUP MANAGER**,” defined according to the AngloSaxon model of the **ALLIANCE MANAGER**, is required



SMART CONTRACTS

Framework Alliance Contract



See: FAC-1 project

Refer to: <https://www.kcl.ac.uk/law/research/centres/construction/alliance-contracts>

D. Mosey, Director del Centre of Construction Lwa & Dispure Resolution, King's College London

Challenges and Limitations of BIM

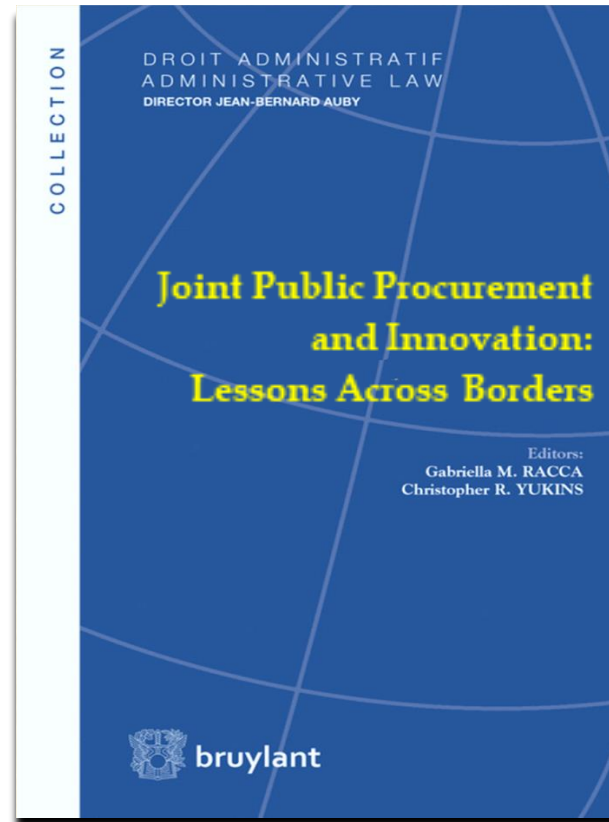
Implementing BIM in the public sector presents challenges, including resistance to change due to:

existing practices

the need for significant initial investment in technology and capacity development

training

There are also technical and cultural barriers to adopting BIM, which can hinder its effective implementation across different regions or teams within the public sector.



Available [here](#)

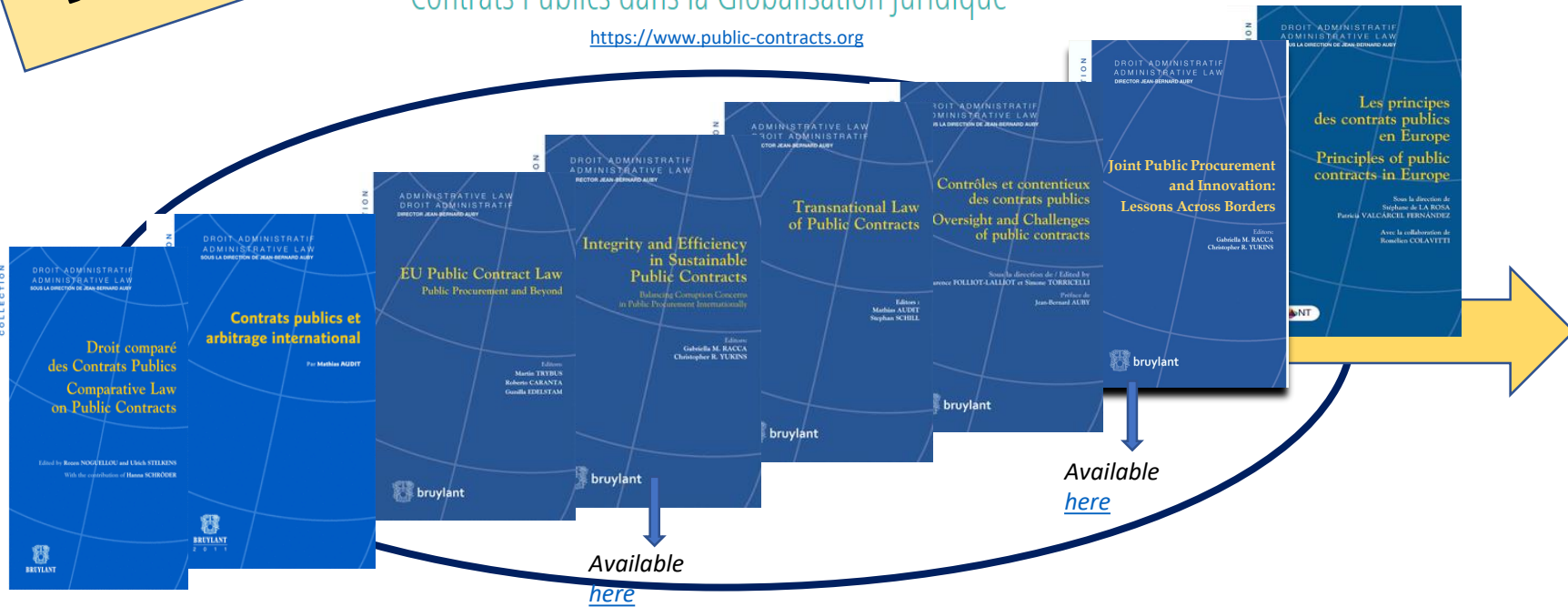
G. M. DI GIUDA, G. M. RACCA, *[From Works Contracts to Collaborative Contracts: The Challenges of Building Information Modeling \(BIM\) in public procurement](#)*, in G. M. Racca - C. R. Yukins (a cura di), *Joint Public Procurement and Innovation: Lessons Across Borders*, Bruxelles, Bruylant, 2019, 223-271

Building Networks



Public Contracts in Legal Globalization / Contrats Publics dans la Globalisation Juridique

<https://www.public-contracts.org>



More information [here](#)



<https://publicprocurementinternational.com/>



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Thank you for your attention!



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