续表A.3.1

类型	EXPRESS捕述
任务类型枚举 (lfeTaskTypeEnum)	TYPE IfcTaskTypeEnum =ENUMERATIDN OF(ATTENDANCE. CONSTRUCTION. DEMOLITON, DISMANTLE. DISPOSAL, INSTAILATION. 1OGISTIC MAINTENANCE, MOVE. OPERATION, REMOVAL., RENOVATION, 1SERDEFINED NOTDEFINFD); END_TYPE
工作日历类型枚举 (IfeWoekCalendar TypeFnum)	TYPE IfeWorkCalendarTypeEnum-ENUMERATION OF(FIRSTSHIFT, SECONDSHIFT THIRDSHIFT, USERDEFINFD, NOTDEFINED): END_TYPE
工作方案类型枚举 (IfcWorkPlan TyprEnum)	TYPE IfeWorkPlanTypeEnum =ENUMEFATION OF《 ACTUAL BASELINE, PLANNED, USERDEFINFD, NOTDEFINED); END_TYPE
工作计划类型枚举 (IfeWorkSchedule TypeEnum)	TYPE Hf-WorkScheduleTypeEmum=ENUMERATION OF(ACTUAL, BASELINE, PLANNED, USERDEFINED, NOTDEFINFD); END_TYPE

A.3.2 过程扩展实体的EXPRESS描述应符合表A.3.2的规定。

表A.3.2 过程扩展实体的EXPRESS 描述

实体	EXPRFSS措述
事件 (IieEvent)	ENTTTY IfEvent SUETYPE OF IlkProcess; PredefinedType:OPTIONAL IfcEvent TypeEnum: Event TriggerType:OPTIONAL.IfeEvent TnggerTypeEnuma UserDefinedEventTriggerType;OPIONAL.IfeLabel; EventOccurenceTime:OPTIONAL.IfcEvertTime; WHERE CoereetPredefinedType:NOT(EXISTS(PrdefinedType))OR(PredefinedType>IfcEwent TypeEnum.USERDEFINED)OR((PredcfnedType -IfcEventTypeEnum.USERDEFINED)AND EXISTS (SELF\HcObject.ObjectType)); CoereetTypeAssigned :NOT(EXISTS(EwertTriggerType))OR(EvntTniggerType <>IfeEvent Trigger TypeEnum.USERDEFINED)OR((Even.TriggerType -IfeEventTrggerTypeEnum.USERDEFINED) AND EXISTS(UserDefinedEvent TriggerType)): 12*D_NTITY

续表A.3.2

实体	EXPRESS操述
事件类型 (lfeEventType)	ENIIIY IfcEvent Type SLBTYPE OF IfeTypeProcess; PredefinedType:IfeEwent TypeEnum; EvmtTriggerType:IfcEvend TriggerTypeEnum; UserDefinedEvent TriggerType:OPTIONAL fcLabel; WHERE CorrectPredefinedType :(PredefinedType <>IfeEventTypeEaum.USERDEFINED)OR((PredefinedType IfeEventTypeEnum.USERDEFINED)AND EXISTS(SEI.F\HeTypeProcess.ProerssType)), CorreetEwntTriggerType :(EwntTriggerType <>HeEwmtTnggerTypeEnum.USERDEFINED)OR ((EvntTrigerType =HfcEventTriggerTvoeEnum USERDEFINED)AND EXISTS(UserDefinedEvent TrggerType)): END_ENTITY
过程 (HfeProeedure)	ENTITY HeProeedure SUBTYPE OF IfcProcess; PredefinedType:OPTIONAL.HeProeedureTypeEnum; WHERE HasName:EXISTS(SELF\HcRoot.Nane); CorreetPredefinedType;NOT(EXISTSIPredefinedType))OR(PredefinedType <>IfeProcedureTypeEnum.USFRDEFINED)OR《《PndefindType =HcProcrdureTypeEnum.USERDEFINED)AND EXISTS(SEIF\IfeObjext.ObjeetType)); END_ENTITY
过程类型 (lfeProcedureType)	ENTTTY IfcProcedure Type SUBTYPE OF IfcTypeProcess; PredefinedType;HfcProeedureTypeEnun; WHERE CorrextPredefinedType;(PredefinedType lfkProcedure TypeEnum.USERDEFINED)OR《(PredefinedType -lfcProcedure TypeEnum.USERLEFTINED)AND EXISTS(SELF\HfcTypeProcess.ProcessType)) END_ENTTTY
顺序关系 (cKelSequence)	ENTITY HcRelSequrnee SUBTYPE OF HeRelConnects; RelatingProcess:HcProcess; RelatedProcess:HfcProcesst Timelag:OPTIONAL IfeLagTimei ScqaeneeType:OPTIONAL.HeSequencEnum; UserLetmedSeqoencelype;UFITUNAL Hfelabel; WHERE AvoidlnconsistentSequence,RelatingProxss :>;RelstedProcess; CorrextSeguenceType;(SesenceType <>MeSeeoenceEnum.USERDEFINED)OR((SequeneType=IfeSopenceEnum.USERDEFINED)AND EXISTS(UserDfinedSequenceType)); END_ENTITY
任务 (IfeTask)	ENTTTY HcTask SUBTYPE OF fcProeess; Satus:OPTIONAL IfcLabel; WorkMetheod:OPTIONAL.IHeLabel, lsMilestone:BOOLEAN; Priority:OPIONAL.INTEGER; TaskTime:OPTIONAL IKeTaskTimer PredefinedType:OPTIONAL.HeTaskT;peEnum; WHERE HasName:EXISTS(SELF\HcRoot.Nane); CorreetPredefinedType;NOT(EXISTSOPredefinedType))OR(PredefinedType <>IfeTaskTypeEnum.USERDEFINED)OR((PredefinedType =IkTaskTypeEnum.USERDEFINED)AND EXISTS(SELF\HeObject.ObjectType)); END_ENTITY

续表A.3.2

实体	EXPRESS捕述
任务类型 (lfeTaskType)	ENTITY IfeTaskType SUBTYTE OF IikTypeProcess; PredefinedType:lieTaskTypeEnum; WorkMethod :OPTIONAL.IfeLabel; WHERE CorrectPredefinedType:(PredefinedType<>HeTaskTypeEnum.USERDEFINED)OR((PredeinedType=feTaskTypeEnum.USERDEFINED)AMD EXISTS(SEIF\IKeTypeProcess.ProeessType)); END_ENTITY
工作日历 (IfeWorkCalendar)	ENTITY IfeWorkCalendar SUBTYPE OF IfkControl; WorkingTimas:OPTIONAL.SET[1:?]OF McWorkTimei ExceptionTimes:OPTIONAL.SET[1.?]OF HcWorkTimer PredefinedType,OPTIONAL IfcWorkCalendarTypeEnum; WHERE Corre ctPredefinedType:NOT(EXISTS(PredefinedType))OR(PredefinedType>IfrWorkCalendarTypeEnum.USERDEFINED)OR((PredefnelType -IfcWorkCalendarTypeEnum.USERDEFINED)AND EXISTS(SELF\IfcObject.ObjectType)): END_ENTITY
工作控制 (lfeWorkControl)	ENTTTY IfcWorkControl AHSTRNCT SUPERTYPE OF(ONBOF(1KWorkPlan,IfcWorkSchedule)) SUBTYPE OF IkcControl; CreatioaDate:IfeDateTine; Creators:OPTIONAL.SET[1:?]OF IfePersom: Purpose:OPTIONAL.Ifelabel; Duratice:OPTONAL.HeDuration; TotalFoat:OPTIONAL.IfcDuratioe; SartTme :HfcDoteTime: FinishTime:OPTIONAL.HcDateTme; END_ENTITY
工作方案 (lfcWorkPlan)	ENTITY IfcWorkPlan SUBTYPE OF IfcWorkControl; PredkfinedType:OPTIONAL.IfcWorkPlanType Enum: WHERE CorrectPredefinedType:NOT(EXISTS(PredefinedType))OR(PredefinedType>IfcWorkPlanTypeEnum.USERDEFINED)OR((PredefinedTrpe =HeWorkPlanTypeEnum.USERDEFINED)AND EXISTS(SELF\feOject.ObjectType)); END_ENTITY
工作计划 (Ife WorkSchedile)	ENTTTY IfcWorkSchedule SUBIYIE UF Ihe WorkLontrol; PredkfinedType:OPTIONAL.IfeWorkSchetuleTypeEnum; WHERE CorrectPredefinedType:NOT(EXISTS(PrudefinedType))OR(PredefinedType<>IfcWorkScheduleTypeEnum USFRDEFINED)OR((PredefnedType =IicWorkScheduleTypeEnum.USERDEFINED)AND EXISTS(SELF\UfcObject,ObjectType)); END_ENTITY

A.4 产 品 扩 展

A.4.1 产品扩展类型的 EXPRESS 描述应符合表 A.4.1 的规定。

表 A.4.1 产品扩展类型的 EXPRESS 描述

类型	EXPRFSS措述
装配场地 (HfeAssembly PlnceEnum)	TYPE IfcAssemblyPlaceEnum =ENUMERATION OF(SITE, FACTORY, NOTDEFINED) END_TYPE

续表A.4.1

类型	EXPRESS操述
元素装配类型(lfeElementAssembly TypeEnum)	TYPE IfcElementAssembly TypeEnum =ENUMERATION OF(ACCESSORY_ASSEMH.Y, ARCH, BEAM GRID, HRACFD_FRAME, GIKDER, REINFORCEMENT_UNIT, RIGID_FRAME, SLAB_FIEI.D, TRUSS, USFRDEFINED, NOTDEFINED); END_TYPE
元素组成(HeElemeat CompositionEmum)	TYPE feElementCompositionEaum -ENUMERATION OF(COMPLEX, EL.EMENT, PARTIAL); END_TYPE
外部空间元素类型(IcExtemalSpatial ElementTypeEnum)	TYPE fcExtermlSpotialEemmtTyreEn=n-ENUMTRATION OF(EXTERNAL EXTERNAL EARTH, EXTFRNAI.WATER. EXTERNAL_FIRE. 1ISERDEFINED NOTDEFIEND); END_TYPE
地理元素类型(HeGeographicElement TypeEnum)	TYPE IfeGeographicElemmtTypeEnum-ENUMERATION OF(TERRAIN. USERDEFINED, NOTDEFINED); END_TYPE
网格类型(lteGirid TypeEnum)	TYPE HcGndTypeEram=ENUMERATION OF(RFCTANGULAR, RADLAL, TRIANGULAR. IRREGULAR. USERDEFINED, NOTDEFINED); END_TYPE
内/外部(Hclnternal OrExternalFmum)	TYPE IfcIntemalOrExtemalEnum =ENUMERATION OF(INTERNAL, EXTERNAL, EXTERNAI,EARTH, EXTERNAL,WATER. EXTERNAL,FIRE NOTDEFINED): END_TYPE
洞口元素(HeOpeningElement TypeEnum)	TYPE fcOpenirgElemeat TypeEnum-ENUMERATION OF OPENING, RFCESS, USERDEFINED, NOTDEFINED); END_TVTE

续表A.4.1

类型	EXPRESS捕述
实体/虚拟 (fcPhysicalOr VirtuslEnum)	TYPE IcPhysialOrVirtualFsum =ENUMERATION OF(PHYSCAL., VIRTUAL, NOTDEFINED); END_TYPE
投影元素类型 (lfeProjextionElement TypeEnum)	TYPE IfcProjectionBement TypeEnum =ENUMERATION OF(USERDEFINED, NOTDEF1NFD); END_TYPE
空间类型 (lfeSpaceTypeEnum)	TYPE IeSpaceTypeEnum =ENLMERATION OF(SPACE。 PARKING, GFA, INTERNAL. EXTERNAL, USERDEFINED, NOTDEFINFD); END_TYPE
空间区域类型 (HeSpatialZone TypeEnum)	TYPE IhcSpatialZomeTypeEnum -ENUMERATION OF(CONSTRUCTION FIRESAFETY. LJGHTING, OCCUPANCY, SECURITY, THERMAL, TRANSPORT, VENTILATION. USERDEFINFD, NOTDEFINED); END_TYPE
运输元素类型 (lteTansportEement TypeEnum)	TYPE IieTransportElmentTypeEnum -ENUMERATION OF(ELEVATOR, ESCALATOR, MOVINGWALKWAY. CRANEWAY, LIFTINGGEAR, USERDEFINFD, NOTDFFINED) END_TYPE
空间边界选项 (HeSpeceBoundary Selket)	TYPE IfeSpaceBoundarySelect =SELECT lfeSpace, lfcExtenalSpatislElement); END_TYPE

A.4.2 产品扩展实体的EXPRESS描述应符合表A.4.2 的规定。

表 A.4.2 产品扩展实体的 EXPRESS 描述

实体	rxppFSS描述
注释 (lfcAnnotation)	ENTTTY IfeAnnotation SUBTYPE OF IfkProduct; INVERSE ContainedInStructure:SET [0:1]OF IfcRNContninedInSpetialSeructure FOR RlatedElementst END_ENTITY
建筑 (licBuilding)	ENTITY IfeBuildng SUBTYPE OF IfcSpatialStractureElement; BevatiorOIRefHeight:OPTTONAL.HcLengthMeasure; BevationOTerain:OPTIONAL.IfeLengthMeasure; BuildingAddress,OPTIONAL IicPostalAdcress; END_ENTTTY

续表A.4.2

实体	EXPRESS操述
建筑元素 (fcBuildingElement)	ENTTTY HeBealdingFement ABSTRACT SUPERTYPE OF(ONEOF:HeBeam,HfcBuildingElementProxy,IeChimney,HeColumn,lie Covering,lfcCurtainWall,IfcDoor,IfcFooting,IfeMember,HcPle,IfcPlate,HcRailing,lcRamp,licRamp Flight,HcRoof.licShadingDevice.lfeSUb.IfcStair,IfcStairFlight.IfcWall.IfcWindow)) SUBTYPE OF HcElemnt; INVERSE HasCoverings:SET OF FeReICoversBagElements FOR RelatingBuildirgElement; WHERE MaxOheMaterualAssociation;SIZEOF(QUERY(temp<・SEIF\HcObjectDefinition.HasAssociations I' IFCPRODUCTEXTENSION.IFCRELASSOCIATESMATERIAL'IN TYPEOF(temp)))<=1; END_ENTITY
建筑元素类型 (IfeBuilding ElementType)	ENTITY HcBuildingElement Type ABSTRACT SUPERTYPE OF(ONEOF;IfcBeamType.IfeBuildingElementProxy Type.IfeChimney Type, HeColumnType,HeCovering Type.IteCurtainWallType.IfcDoorType,IfeFootingType,HfeMemberType,fe PeType,lfePlateType.IfeRailing Type,IfeRampFlighr Type.IfeRampType,IfcRoofType,IfeShading DewiceType,IicSlabType,HfcStairFlightType,IfeStairType,lfcWallType,IfeWindowType)) SUBTYPE OF HcElementType; END_ENTITY
建筑楼层 (IfcBuildingStorey)	ENTTTY IfcBuildingStorey SUBTYPE OF IleSpetialStructureElemert; Elevation;OPTIONAL.IfcLengthMeasurer END_ENTITY
土木工程元素 (lfeCiwilE)ement)	ENTITY FeCwilElement SUBTYPE OF IfcElement; END_ENTITY
土木工程元素类型 (16cCimilElement Type)	ENTTTY HeCivwilElement Type SUBTYPE OF HeElementType; END_ENTITY
分布式元素 (ldDistribution Bement)	ENTITY IfeDistributionElement SUPERTYPE OF(ONEOF(HcDistributorControlElement,lfeAstributicnFowElement)) SUBTYPE OF fcElement; INVERSE HasPorts:SET OF HeRelConnectsPonToElement FOR RelatedEement; END_ENTITY
分布式元素类型 (HeDstributicm ElemntType)	ENTITY HeDistributionElement Type SUPERTYPE OF(ONEOF(IIcDistnbutionControlElementType,HcDistrbutionFlowEementType)) SUDTYFE OF HfcElementType; END_ENTITY
元素 (HeElememt)	ENTTTY HcElement ABSTRACT SUPERTYPE OF(ONEOF HcBuildirngElement,llcCivilElement,IfcDistribaticnElement, HcElementAssembly,IfcElementComponent,UfcFeatureElement,lfeFumishingElement.lfcGeegraphicPe ment.lfc TransportEement,IicVirtualEemnt)) SUBTYPE OF HcProduct; Tag:OPTIONAL.Ifedentifier; INVERSE FillsVoids,SET [0,1]OF IfcRelFillsEl-ment FOR RelatedBuidingPlement; ConneetedTo:SET OF IicReConneetsFlements FOR RdatingElement; IsInterferedByDements;SET OF IfcRellnterferesElements FOR RelatedElement; InterferesFlements;SET OF IfcRellnterferesElements FOR RelatingElement; HasPmjections:SET OF IfcRelProjectsElement FOR RelatingElementi ReferencodlnStructures:SET OF lfeRelRdferencedInSpatialStructure FOR RelatedElementsi HasOpenings;SET OF IfcRelVoidsElenent FOR RelstingBuildingElemcnt; IsConnectionRealization,SET OF HcRe ConneetsWithRealiaingHlements FOR RealisingFlements; ProvidesBeundanes:SET OF HcRelSpareBoundary FOR RelatedBaaldingElement; ComneetedFrom:SET OF fcRelCoeneetsElements FOR RelatedPement; ComtainedlnStruture:SET [0:1]OF IkRelContainedInSpatinlStructure FOR RelatedElements; FND_ENTITY

续表 A.4.2

实体	EXPRESS捕述
元素集合 (IfeElementAssembly)	ENTTTY IfcElementAssembly SUBTYPE OF IkEement; AssemblyPlace:OPTIONAL.IfeAssemblyPlnceEnum; PredefinedType;OPTIONAL IfcElementAssembly TypeEnum; WHERE CorrectPredefinedType:NOT(EXISTS(ProdefinedType))OR(PredfinedType <>IfcElementAssembly TypeEnum USERDEFINED)OR((PredelinedType -feElementAssembly TypeFnum.USFRDEFINED) AND EXISTS(SELF\HeObjeet.ObjectTyp)); CorrectTypeAssigned;(SLZEOF(1sTypedB;)-0)ORCIFCPRODUCTEXTEN SION.IFCELEMENTASSEMBLYTYPE IN TYPEOF(SEIF\IfcOhject.IsTypedBy[1].RelatingType)); END_ENTITY
元素集合类型 (lfeElement AssemblyType)	ENTTTY IfcElementAssembly Type SUBTYPE OF IkBementType; PredkfinedType:IfcBlementAssembly TypeEnumr WHERE CoereetPredkfinedType:(PredefinedType<>feElementAssmblyTypeEaum.USERDEFINED)OR ((PredefinedType -fePementAssemblyTpeEnum.USERDEFINED)AND EXISTS(SEILF\HcFlement Type.ElementType)) END_ENTTTY
元素数量 (IfcE)ementQuantity)	ENTITY IfcElementQuantity SUBTYPE OF IfcQuantitrySet; MethodOfMeasurement ;OPTIONAL lfeLabel; Quantities;SET [1:?]OF fkPhywicalQusttity; WHERE UniqucQantityNames;IcUniqueQuantityNames(Quantitics); END_ENTITY
元素类型 (HeElementType)	ENTITY IfcElementType AHSTRACT SUPERTYPE OF(ONEOF(ItBuidingElementType.IfeCivilElement Type,fcDistributionElementType,IfcElementAssembly Type,feElsmentComponentType,IfeFumishingElement Type,cGeographicElement Type,HcTansgortElementType)) SUBTYPE OF 1kcTypePmdact; EementType:OPTVONAL.Helabel; END_ENTITY
外部空间元素 (HcExteml SpatialFement)	ENTTTY IfeExternalSpatinlElement SUBTYPE OF IfkExtemalSpatialStrutureEement; FruklmxITyetOFTIO*AI.IkEermlatialLenent TypeEoums INVERSE BounddBy:SET OF NeRelSpaceBcundary FOR RelatingSpace; END_ENTITY
外部空间结构元素 (IieExtenalSpatial SeructureElement)	ENTTTY HcExternalSpatinlStructureElement ABSTRACT SUPERTYPE OF(IcExtemalSpatialElement) SUBTYPE OF lfeSpatialFlement; END_ENTITY
特征元素(IfeFeature Element)	ENTTTY IfcFeatureElement ARSTRACT SUPERTYPEOF(ONEOF(liFeatureElementAdditice.IleFeatureElementSubtracticn.KeSurfaceFeature))SUBTYPE OF IfcElement; END_ENTITY
特征元素增加 (lfcFeatureE)ement Addition)	ENTITY lfeFeatureElementAddition ABSTRACT SUPERTYPE OF(IcProjectiosF)ement) SUBTYPE OF IkkFeatureElement; INVFRSE ProjectsDements:IfeRelProjextsBement FOR RelntedFeatureElement; FND_FNTITY

续表A.4.2

实体	EXPRESS操述
特征元素相减 (feFeatureElement Subtraction)	ENTTTY IfcFeatureElemensSubtraction ARSTRACT SUPERTYPE OF(ONEOF:HcOpenirgElement.IfeVeidingFeature)) SUBTYPE OF HeFeatureElement; INVERSE VoidsElements;fcRelVoidsDlement FCR RelatedOpeningEJement; WHERE Has NoSuhtraction:SLZPOF(SEL.F\HcElement.HasOpenings)=0; lsNotFilling:SIZFOF(SEI.F\IfeElemen.FalsVoids)=0 END_ENTITY
家装元素 (TfcFurnishingElement)	ENTITY IfeFurnishingElement SUPERTYPE OF(ONEOF(IfcFurniture,IfeSystemFurnitureement)) SIIRTYPE.OF IfcElement END_ENTITY
家装元素类型 (lfeFurnishing ElementType)	ENTTTY HcFurnishingElement Type SUPERTYPE OF(ONEOF(HcFurnitureType,IfeSystemFurnitureElement Type)) SIBTYPE OF IfcFJementType; END_ENTITY
地理元素 IfeGeographicElemen	ENTITY HeGeogrsphicFElement SUBTYPE OF IfcElement; PredefinedType,OPTIONAL.HeGeographicElementTvveEnum WHERE CorreetPredefinedType:NOT(EXISTSIPredefinedType))OR(PredefinedType <>IfeGeographikEle mentTypeEnum.USERDEFINED)OR((PredefinedType -HeGengmphicElement TypeEnum. USERDEFINED)AND EXISTS (SELF INeObject.ObjectType)); CorreetTypeAssigned:(SIZEOF(LsTypdBy)=0)OR 'IFCPRODUCTEXTENSION. IFCGEOGRAPHICELEMENTTYPE IN TYPEOF(SEI.F\kObject.IsTypedBy[1].RelatingType)); END_ENTITY
地理元素类型 (HeGeographic ElementType)	ENTITY IicGeographicElement Type SUBTYPE OF HcElement Types PredefinedType:feGeographicElement TypeEnum; WHERE CorreetPredefinedType:(PredefinedTpe<>HieGeographicElementTypeEnum.USERDEFINED)OR ((PredefinedType -feGeographicElemmt TypeEnum.USERDEFINED)AND EXISTS(SELF\HcElement Type ElementType)); END_ENTITY
网格 (lfcGrid)	ENTTTY HeGrd SUBTYPE OF IHcProduct; UAxes:LIST [1:?]OF UNIQUE feGndAxis; VAxes:LIST[1:?]OF UNIQUE HeGridAxis; WAxes:OPTIONAL LIST [1:?]OF UNIQUE IfcGridAxis; PredefinedType;OPTONAL HeGndTypeEnum; INVERSE ComtainedlnStrxture:SET [0:1]OF IkRelContainedInSpatialStructure FOR RelatedElements; WHERE HasPlacement;EXISTS(SELF\IfcProduet.ObjectPlacement); END_ENTITY
开洞元素 (HfeOpeningElememt)	ENTITY IfcOpeningElement SUPERTYPE OF(HcOpeningSandindCase) SUBTYPE OF IfeFeatureE]ementSubtrxtion; PredefinedType;OPTONAL.HeOpeningElement TypeEnum; INVERSE HasFilings:SET OF IcRelFillsElemen:FOR RelatingOpeningElement; END_ENTITY
标准洞口形式 (HeOpeningStandard Csal	ENTITY HeOpeningSuandardCase SUBTYPE OF HcOyeningElement; FNNLFNTTTV

续表A.4.2

实体	EXPRESS捕述
端口 (lfePort)	ENTTTY IfcPort ABSTRACT SUPERTYPE OF(IcDistributonPort) SUBTYPE OF IfkProduct; INVFRSE Containedln;SET [0,1]OF IfcRelConnectsPortToElement FOR RelatingPort; ConnectedFrom,SET [0,1]OF IfcRelComectsPorts FOR RelatedPort; ConnectedTo:SET [0:1]OF HcRelConneasPoets FOR RelatingPort; END_ENTITY
投影元素 (16rPmjeetionHJement)	ENTITY IfProjeetionElement SUBTYPE OF IkFeatureElementAdditiom; Prnd-finedType.OPTIONA1.If-PmjretionHlement TypsFnumi END_ENTITY
关联材料关系 (IfcRelAssociates Material)	ENTITY IfcRelAssociatesMaterial SUBTYPE OF IfkRdlAssociatesi RdatingMaterial,IfcMaterialSelect; WHERE NoVoidElement,SIZBOF(QUERY(temp<・SEI F\IfcRelAssociates.RelatedObjeets I ('IFCPRO DUCTEXTENSION IFCFEATUREELEMENTSUBTRACTION IN TYPEOF(temp))ORCIFCPRO DUCTEXTENSION.IFCVIRTUALELEMENT'IN TYPBOF(temp))))=0; AllowedlPlements;SIZEOF(QUERY(temp<・SELF\IicRelAssccintes.RclatedOhjects I(SIZEOF (TYPEOF(temp)・_[IFCPRODUCTEXTENSION.IFCELEMENT.IFCPRODUCTEXTEN SION.IFCELEMENTTYPE,'IFCSHAREDAL.DCELEMENTR.IPCWINDOWETVLE'.'IFCRHARED R DGELEMENTS IFCDOORSTYLE.'IFCSTRUCTURALANALYSISDOMAIN.IFCSTRUCTURAL MEMBER,IFCPRODUCTEXTENSION.IRCPORTJ)=0)))=0; END_ENTTTY
连接元素关系 (lfeRelConnects Elements)	ENTTTY IfeRlCceneetsElements SUPERTYPE OF(ONBOF(lkRelConneetsfathElements,HcRelConnectsWithRealizingEements)) SUBTYPE OF IfcRdConneets; ConnecticeGeometry;OPTIONAL.HcConnstiouGccaety, RdatingElement :fcElement; RdatedElement ;IfcElement; WHERE NoSelfReference,RelatingElemnt ;<>;XelatedEement; END_ENTITY
连接端口关系 (IfcRelConnectsPorts)	ENTITY IfcRelCoanectsPorts SUBTYPE OF IfcReConneets; RdatingPort:lfcPort; RdatedPort :IfcPort; RealizingElement;OPTIONAL IfcElement; WHERE NoSeIIReference:RelatingPort :>:ReltedPort; END_ENTITY
连接端口元素关系 (IkeReIConneets PonToElement)	ENTITY IfeRelCoaneetsPortToElement SUBTYPE OF IKcReiConneets; RdatingPoet :KePort; RdatelElement :IfcDistrbutionElement; END_ENTITY
连接实现元素关系 (IfcRelConnectsWith RealizingEements)	ENTITY IfeRelCoaneets WithRealiringElemsnts SUBTYPE OF IfcReConnectsElements; RealiingElements;SET [1:?]OF IkEJement; ConnecticnType:OPTIONAL IHeLabel; END_ENTITY
包含于空间结构关系 (fcRIContainedln SpatialStructure)	ENTITY IIeReIContainedInSpatialStructure SUBTYPE OF IfcRelConneets; RdatedElements:SET [1:?]OF fcProdudt; RlatingStructure:IfeSpatinlElement; WHERE WR31:SIZEOF(QUERY(temp<・RelatrdF)ements I'IPCPRODUCTEXTENSION IFCSPATIALSTRUCTUREELEMENT IN TYPEOF(temp)))-0; E*D_NTTY

续表A.4.2

实体	EXPRESS操述
填充元素关系 (HcRelFillsElement)	ENTITY IfcRelFidlsElemen SUBTYPE OF FcRelConnects; RelatingOpeningElement :IfeOpeningElement; RelatedBuildingElement,IfeElement; END_ENTITY
干涉元素关系 (NeRelInterferes Elements)	ENTITY HcRelInterferesElements SUBTYPE OF IfcRelConnects; RelatingElement :IfeElement; RelatedEJement :lfeElement; InterferenceGecmetry,OPTIONAL HeConnecticeGeometry; InterferenceType;OPTIONAL.IHcldenther; ImpliedOrder;LOGICALi WHFERE NotSelfReference:RelatingElement ;<>:RelatedElement; END_ENTTTY
投影元素关系 (IfcRelProjects Element)	ENTTTY HcRelProjectsElement SUBTYPE OF IfcRelDecomposes; RelatingElement:IfcElement; RelatedFeatureElement ;IfcFeatureElementAddition: END_ENTITY
参考空间结构关系 (IfeRelIReferencedln SputislStructure)	ENTITY HcReIReferencedInSpatialStrue ure SUBTYPE OF IfcRelConnects; RelatedElements;SET [1:?]OF IcPruduct; RelstingStructure:HeSpatal Flement; WHERE WR31:SIZEOF(QUERY(temp<・RLatrdElements I'IFCPRODUCTEXTENSION IFCSPATIAISTRUCTUREELEMENT IN TYPEOF(temp)))=0; END_ENTITY
建筑服务关系 (IfcReServices Baildings)	ENTITY IfcRelServicesBuildings SUBTYPE OF HcRelConnects: RelatingSystem:IfcSystem; RelatedBuildngs:SET [1:?]OF IfeSpgtialFement; END_ENTITY
空间边界关系 (lfcRelSpaceBoundary)	ENTTTY IcRelSpaceBoundary SUPERTYPE OF(IfeRelSpaceBoundary lstLevel) SUBTYPE OF IfcRelConnertsi Kelanngspace:IfcspaceDoundaryselect; RelatedBuikingElement;fcElement; CemneetionGeometry:OPTIONAL.IfcCennectioeGeometry, PhysicalOVirtualBoundary :IfePhysical)rVirtuslEnumy IntemalOrExternalBoundary,HclnternaOrExtemalFaum; WHERE CorrectPhysOrVirt:((PhysicalOrVirtudBoundary -IfePhysialOrVirtualEnum.Physical)AND(NOTCIF CPRODUCTEXTENSION.IFCVIRTUNLEIEMENT'IN TYPEOF(RelatedBuildingElement))))OR ((PhysicalOrVirtualBoundary -IfePhyscalOrVirtunlEmam.Virtua)AND(CIFCPRODUCTEXTENSNON. IFCVIRTUALELEMENT IN TYPEOF(RelatelBaidingFemcnt))OR('IFCPRODUCTEXTEN SION.IFCOPENINGELEMENT IN TYPEOF(RelatedBuildingElement))》》OR(PysicalOrVirtuslBoundary =licPhysicalOrVirtumlEmum.NotDefined); END_ENTITY
第一级空间边界关系 (HieRelSpace BoundarylstLevel)	ENTITY IfcRelSpaceBoundarylstLevel SUPERTYPE OF(IfecRelSpaceBoundary2ndl xvel) SUBTYPE OF HcRelSpareBoundaryi ParentBoundary:OPTIONAL.IfeRelSpceBoundarylstLevel; INVERSE ImnerBoundaries,SET OF IfcRelSpaceBundaryIstLevel FOR ParentBoundaryi END_ENTITY

续表 A.4.2

实体	EXPRESS描述
第二缓空间边界关系 (IfcRelSpace Boundary2ndLevel)	ENTITY IfcRelSpaceBoundary2ndLevel SUBTYPE OF IkRelSpaceBundarylstLeve; CorrespondingBoundary :OPTIONAL.IfeRdSpeceBoundsry2ndl.evel: INVFRSE Coeresponds,SET [0,1]OF lfcRelSpaceBundary2ndLevel FOR CorrespondingBoundary; END_ENTITY
开洞元素关系 (IfeRelVoidsElement)	ENTTTY IfcRelVoidsElement SUBTYPE OF IiCRdDcomposes; RdatingBaidingPement:IfeElement; RdatedOpeningElement:IlcFeatureElemensSubtrnetion; END_ENTITY
场地 (HeSite)	ENTITY lfeSite SUBTYPE OF IfcSpatialStructureElement; RefLatitude:OPTIONAL.IicCompoundPlaseAngleMeasure; RefLongitude:OPTIONAL.IfeCompoundPhneAngleMeasure; RefElevation;OPIONAL.HcLengthMeasure; LandTitleNumber:OPTIONAL.Ifeabel; SiteAddress:OPTIONAL.IicPostalAddress END_ENTTTY
空间 (IfeSpace)	ENTTTY IfeSpace SUBTYPE OF IkSpatialStructureElement; PredefinedType:OPTIONAL.IfeSpaceTypeFnum; BevationWithFkoring:OPTIONAL.IfcLergthMeasure; INVERSE HasCoverings:SET OF HcRelCoversSpace,FOR RelatingSpace; BoundedEy,SET OF MeRelSpaceBoundary FOR RelatingSpacer WHERE CorrectPredefinedType:NOT(EXISTS(ProdefinedType))OR(PredefinedType<>IfeSpace TypeEnum USERDEFINED)OR((PredefnedType -IfeSpace Type Fnum.USFRDEFINED)AND EXISTS (SELF\HeObjeet.ObjeetType)); CorreetTypeAssigped;(SIZEOF(LsTypedhy)=0)OR(‘IFCPRODUCTEXTENSION.IFCSPACETYPE’ IN TYPEOF(SELF\IfcObject.IsTypedBy[1].RelatingType)); END_ENTITY
空间类整 (lfeSpaceType)	ENTITY IfeSpaceType SUBTYPE OF IcSpatinlStructureElementType; PndefinedType:IleSyace TypeEnum; LongName,OPTIONAL.IfcLabel: WHERE CorrectPredefinedType:(PredefinedType <>HeSpaceTypeEnam.USERDEFINED)OR(《PredefinedType -feSpaceTypeEnum.USERDEFINED)AXD EXISTS(SEIF\HcSpatialFementType.ElementType) END_ENTITY
空间元素 (IfeSpatialElememt)	ENTITY IfcSpatialElement ABSTRACT SUPERTYPE OF(ONEOF(McExternalSpatialStructureElement,HfeSpatialStructureElement, lfeSpatislZoee)) SUBTYPE OF IfkProduct; LongName:OPTIONAL IfeLabel: INVERSE ContainsElements;SET OF IfcRelContainellnSpatialSerueture FOR RelatingStructure; ServicedBySystems:SET OF IfeRelServicesBuildings FOR RelatedBuildingst ReferencesElemrnts:SET OF IK-RelRefereicedInSpatialStructure FOR RelatingStructure; END_ENTTTY
空间元素类型 (IfeSpatial ElementType)	ENTITY IfeSpatialElement Type ABSTRACT SUPERTYPE OF(ONEOF(IiSpatinlStructureElement Type,IfeSpatinlZoneType)) SUBTYPE OF IfcTypeProduct; EementType;OPTONAL.HfeLabel; END ENTITY

续表A.4.2

实体	EXPRESS操述
空间结构元素 (HeSpatialStructure Element)	ENTTTY HeSpatialStructureElement ABSTRACT SUPERTYPE OF(ONEOF.HcBalding,febulding Storey,MeSite,HfeSpace)) SUBTYPE OF HeSpatalFJement; CompositionType:OPTIONAL.IfcElem:ntCompositionEnum; WHERE WR41:(HIINDEX(SELF\IfcObjectDef nition.Drcomposes)=1)AND CIFCKERNEI- IFCRFLAGGREGATES IN TYPEOF(SELF\IcObjectDfinition.Decomposes(1)))AND(CIFCKER NEL IFCPROJECT IN TYPEOF(SELN\IKcObjectDkinitice.Deeomposes[1].RelatingObjeet))OR(IF CPRODUCTEXTENSION.IFCSPATIALSTRUCTURFELEMENT IN TYTEOF(SELF\HcOjectDei nition.Decomposes[1].RelatingObjext))); END ENTITY
空间结构元素类型 (IfeSpatialStructure ElementType)	ENTITY NeSpatialStructureElementTyp ABSTRACT SUPERTYPE OF(IfeSpaceType) SUBTYPE OF HeSpatialElement Type; END ENTITY
空间区域 (IfeSpatislZoee)	ENTITY HeSpatialZone SUBTYPE OF IfcSpatialElement; PredefinedType:OPTIONAL.HeSpatialZoneTypeEnum WHERE CorrectPredefinedType;NOT(EXISTS(PredefinedType))OR(Predefined Type <>IfeSpatinlZoee TyPEnum.USERDEFINED)OR((PndfisdTyp=IL-Gi-IZamTyrFmm IISFPDEFINE ANN EXISTS(SELF\fcObject,ObjeetType))r CorrectTypeAssigned:(SIZEOF(LsTypdBy)=0)OR (IFCPRODUCTEXTENSION. IFCSPATIAL ZONETYPE IN TYPEOFISEI.F\IkObject.IsTypedBy[1].RelatingType)); END_ENTITY
空间区域类型 (lieSpatialZomeType)	ENTTTY HfeSpatialZone Type SUBTYPE OF HeSpatalElementTypes PredefinedType:IfeSpatialZone TypeEmum; LongName:OPTONAL.Ifdlabel; WHERE CorreetPredefinedType;(PredefinedType >lfeSpatialZoneTypeEnum.USERDEFINED)OR((Pre dkfinedType -licSpatialZoneTypeEnum USERDEFINED)AND EXISTS(SELF\IfcSpatialEementType. ElementType)); END_ENTITY
系统 (lleSystem)	ENTITY HeSystem SUPERTYPE OF(ONEOF(IfcBuildingSrstem.lfestributsemSystem,IfeSeructumlAnalyrisModel,Ife Zone)) sKTVPF F KAp INVERSE ServkesBuildines:SET [0,1]OF fcReSevicesBuildings FOR RelatingSystem; END_ENTITY
运输元素 (HeTansportElement)	ENTIIY IeTmnsport Element SUBTYPE OF HcElement; PredefinedType:OPTIONAL.HeTransportElement TypeEnam: WHERE CorreetPredefinsdType;NOT(EXISTSUPredefinedType))OR(PredefinedType >IfeTransportElement TypeEnum.USERDEFINED)OR《《PrndefinedType -HcTransportElementTypeEmum.USERDEFINED) AND EXISTS(SEIF\IfcOLjext.ObjeetType)); CorreetTypeAssigned;(SIZEOF(IsTypedty)=U)U(IFLFKUUULIEAIENSUN. IFCTRANSPORTELEMENTTYTE IN TYPEOF(SEI.F\IfcObjeet.IsTypedBy[1]. RelatingType)》 END_ENTITY
运输元素类型 (MeTransport ElementType)	ENTITY HeTransportElementType SUBTYPE OF IfcElementTypei PredefinedType;IfeTransportElement TypeEmum; WHERE CorreetPredefinedType,(PredefinedType <>IleTmnsportElementTypeEnum.USERDEFINED)OR ((PredefinedType -HfeTansportElemeat TypeEnum.USERDEFINED)AND EXISTSXSELF\IfcElement Type.ElementType)); END ENTITY

续表A.4.2

实体	EXPRESS捕述
虚拟元素 (lfcVirtualEement)	ENTITY lfVirlFement SUBTYPE OF lcFement; END_ENTITY
区域 (IfeZone)	ENTTTY IfcZone SUBTYPE OF IKeSystem LongName:OPTIONAL.IfeLabel, WHERE WRI:(SIZEOF(SELF\IfcGroup.1sGroupelBy)-0)OR(SIZEOF(QUERY(temp<·SELF\e Group lsGroupedBy[1],RelatedObjects I NOT(CIFCPRODUCTEXTENSION,IFCZONE IN TY PEOF(temp))OR(IFCPRODUCTEXTENSION.IFCSPACE IN TYPEOF(temp))OR(IFCPRO DUCTEXTENSION IFCSPATIALZONE IN TTTEOF(temp))-U END_ENTITY

附录 B　共享层数据模式的 EXPRESS 描述

B.1　共享建筑元素

B.1.1　共享建筑元素类型的 EXPRESS 描述应符合表R　1.1的规定，

表B.1.1　共享建筑元素类型的 EXPRESS 描述

类型	EXPRESS描述
梁类型 (HeBeamTypeEnum)	TYPE IeBeamTypeEnum=ENUMERATION OF(BEAM, JOIST, HOLLOWCORE. LINTEL, SPANDREL, T_BEAM, USERDEFINED, NOTDEFINED); END_TYPE
代理元素类型 (IfeBuildingElement ProayTypeEnum)	TYPE IfcBuildingElementProxy TypeEnum -ENUMERATION OF(COMPLEX, ELEMENT PARTIAL, PROVISONFORVOID, USERDEFINED, NOTDEFINED) END_TYPE
建筑系统类型 (HeB-aldingFyatem TypeEnum)	TYPE IfcBuildingSystemTypeEnum =ENUMERATION OF(FENESTRATION. FOUNDATTON, LOADBEARING, OUTERSHELL. SHADING, TRANSPORT. USERDEFINED。 NOTDEFINED): END_TYPE
烟肉类型 (McChimney TypeEnm)	TYPE IeChimney TypeEnum =ENUMERATION OF(USERDEFINED, NOTDEFINED); END_TYPE
柱类型 IfeColumn Type Emum	TVPF fColumnTypeFnam -FNIIMFRATION OF(COLUMN, PILASTER, USERDEFINED. NOTDEFINED); END_TYPE
连接类型 (lfeConnection TypeEnum)	TYPE HeComnectionTypeEnum =ENUMERATION OF(ATPATH, ATSTART, ATEND NOTDEFINED); END_TYPE

续表B1.1

类型	EXPRESS捕述
覆盖物类型 (lkCowering TypeEnum)	TYPE IicCovering TypeEnum -ENUMERATION OF(CFING FLOORING, CLADDING, ROOFING, MOL DING, SKIRTINGHOARD, INSIILATION MEMBRANE, SLEEVING, WRAPPING, USERDEFINFD, NOTDFFINFD); END_TYPE
幕墙类型 (HeCurtainWall TypeEnum)	TYPE IieCurtain WallTypeEnum -ENUMERATION OF(USERDEFINED, NOTDEFTNFD) END_TYPE
门类型 (lfeDbor TypeEnum)	TYPE IdDoorTypeEnum =ENUMFRATION OF(XCR, GATE. TRAPDOOR. USERDEFINFD, NOTDEFINED); END_TYPE
门开启类型 (lkdDoorType OperationEnum)	TYPE IidDoor TypeOperaticnEaum -ENUMERATION OF(SINGLE_SWING_LEFT, SINGLE_SWING_RIGHT, DOUBLE_DOOR_SINGLE_SWING, DOUBLE_DOOR_SINGLE_SWING_OPPOSITEIEFT, DOUBLE DOOR_SINGLE_SWING_OPPOSITE_RIGHT, DOUBLE_SWING_LEFT. DOUBLE_SWING_RIGHT, DOUBLE_DOOR_DOUBLE_SWING. SLIDING_TO_LEFT, SLIDING_TO_RIGHT, DOUBLE DOOR_SLIDING, FOLDING_TO_LEFT. FOLDING_TO_RIGHT, DOUBLE DOOR FOLDING, REVOLVING, ROLLINGUP SWING_FIXED_LEFT, SWING_FIXFD_RIGHT. USERDEFINED, NOTDEFINED); END_TYPE
线性构件类型 (IfeMemberType Enum)	TYPE IeMemberTypeEnum -ENUMERATION OF《 BRACE, CHORD, CM1AR, MEMHER, MULLAON, PLATE. POST, PURLIN, RAFTER, STRINGER, STRUT, STUD, USERDEFINFD, NOTDEFINFD); END_TYPE

续表B.1.1

类型	EXPRESS操述
平板类型 (HcPlateTypeEnum)	TYPE IfcPlsteTypeFnum=ENUMFRATION OF(CURTAIN_PANEL. SHEET, USERDEFINED, NOTDEFINED); END_TYPE
扶栏类型 (IfcRailing TypeEmum)	TYPE IfeRailing TypeEnum-ENUMFEATION OF(HANDRAIL。 CUARDRAL BALUSTRADE. USERDEFINED. NYTDEFINED) END_TYPE
坡道段类型 (HeRampFlight TypeEnum)	TYPE HeRampFLghtTypeEeam=ENLMFRATION OF(STRAIGHT, SPIRAL. USERDEFINED, NOTDFFINFD); END_TYPE
坡道类型 (IfcRampTypeEnum)	TYPE HeRampTypeEnum =ENUMERATION OF(STRAIGHT_RUN_RAMP, TWO_STRAIGHT_RUN_RAMP, QUARTER_TURN_RAMP. TWO_QUARTER_TURN_RAMP. HALF_TURN_RAMP, SPIRAL.RAMP, USERDEFINED, NOTDEFINED); END_TYPE
屋顶类型 (IfeRoofTypeEnum)	TYPE fcRoofTypeEnum -ENUMERATION OF(FLAT_ROOF, SHED_ROOF, GARLE_ROOF, HIF_KOOF, HIPPED_GARLE ROOF, GAMBREL_ROOF. MANSARD_ROOF. BARREL.ROOF, RAINBOW_ROOF. BUTTERFLY_ROOF, PAVILIONLROOF, DOME_ROOF, FREFFORM IISFRDFFTNFD. NOTDEFINED); END_TYPE
遮阳设施类型 (feShadingDevice TypeEnum)	TYPE IfeShadingDeviceTypeEnum -ENUMERATION OF(JALOUSIE. SHUTTER, AWNING, USERDEFINED, NOTDEFINED); END TYPE

续表B1.1

类型	EXPRESS捕述
板类型 (IfeSlabTyp*Emum)	TYPE IfeSubTypeEnum=ENUMFRATION OF(FLOOR. ROOF, LANDING, BASESL.AB, USERDEFINED, NOTDEFINFD); END_TYPE
棉段类型 (IfeSeairFlight TypeEnum)	TYPE HeSairFlightTypEnum =ENUMERATION OF(STRAIGHT, WINDFR, SPIRAL.. CURVED, FREEFORM. USERDEFINED, NOTDEFINED); END_TYPE
楼梯类型 (TfeStairTypeEnum)	TYPE IleStairTypeEnum-ENUMERATIDN OF(STRAIGHT_RLIN_STAIR. TWO_STRAIGHT_RUN_STAIR, QUARTER_WINDING_STAIR. QUARTER_TURN_STAIR, HALF_WINDING_STAIR, HALF_TURN_STAIR, TWO_QUARTER_WINDING_STAIR, TWO_QUARTER_TURN_STAIR, THREE_QUARTER_WINDING_STAIR, THREE QUARTER_TURNSTAIR. SPIRAL.STAIR, DOUBLE_RETURN_STAIR, CURVED_RUN_STAIR, TWO_CURVED_RUN_STAIR. USERDEFINED. NOTDEFINED); END_TYPE
墙类型 (HeWallTypeEnum)	TYFE HcWallTypeEnum —ENUMERATON OF(MOVAM E PARAPET, PARTTTTONING PLMBINGWALL SHEAR, SOLIDWALL. STANDARD, POLYGONAL. ELEMENTEDWAIL. USERDEFINED, NOTDEFINFD); END_TYPE
窗类型 (HeWindowType Enum)	TYPE HcWindowTypeEnum-ENUMERATION OF(WINDOW. SKYLIGHT. LJGHTDOME, USERDEFINED, NOTDEFINED); END_TYPE

续表B.1.1

类型	EXPRESS操述
窗分隔类型 (IkeWindow Type Partitioningfmum)	TYPE HeWindowTypePartitioningEnum=ENUMEKATIONUF(SINGLE_PANEL, DOURLE_PANEL_VERTICAL. DOULE_PANEL_HORIZONTAL, TRIPLE PANEI,VERTICAL, TRIPLE_PANEI.BOTTOM. TRIPLE_PANEI.TOP. TRIPLE_PANEI_LEFT, TRIPLE_PANEL.RIGHT, TRIPLE_PANEI_HORIZONTAL, USERDEFINLD, NOTDEFINED); END_TYPE

B.1.2 共享建筑元素实体的 EXPRESS 描述应符合表B.1.2 的规定。

表B. 1. 2共享建筑元素实体的EXPRESS描述

实体	EXPRESS描述
梁(lleBeam)	ENTITY UcBeam SUPERTYPE OF(IfeBeamStandardCase) SIRTYPE OF IfcBauildingElement; PredefinedType:OPTIONAL.HcBeamTypeEaum; WHERE CorreetPredefinedType:NOT(EXISTSIPredefinedType))OR(PredefinedType >lfe BeamTypeEnum USERDEFINED)OR((PredefinedType -llkBeamTypeEnum.USERDEFINED)AND EXISTS(SELF\IfcObjeet.AjeetType)); CorreetTypeAssigned:(SIZFOF(IsTypdBy)-O)OR(IFCSHAREDEL DGELEMENTS.IFCBEAMTYPE ’IN TYPEOF(SELF\IfcObjeet.LsTypedB[1].RelatingType)); END_ENTITY
标准梁 (HcBeamSandard Case)	ENTITY HcBeamStandardCase SUBTYPE OF HeBeam; WHERE HasMaterialProfileSetUsage:SIZEOF (QUERY(temp<・USEDIN(SEIF, IFCKERNEL.IFCRELASSOCIATES RELATEDOBJECTS)I ‘IFCPRODUCTEXTENSION. IFCRFLLASSOCIATESMATERIAL’IN TYPEOF(temp))AND (IFCMATERIALRE SOURCE.IFCMATERIALPROFILESETUSAGE IN TYPEOF(temp.RlatingMateri))))=1: RND_ENTTTV
梁类型 (IfeBeamType)	ENTITY IfeBeamType SUBTYPE OF IHfcBuildingElementType; PredefinedType;HeBeam TypeEnumr WHERE CorreetPredefinedType;(PredefinedType>lfcBeamTypeEnum.USERDEFINED)OR((PredefinedType -lfcBeamTypeEnum.USERDEFINED)AND EXISTS(SEIF\IIcEement Type.ElementType)); END_ENTITY
代理建筑元素 (IfeBuildingElement Proxy)	ENTTTV HreBldingFemenrPmxy SUBTYPE OF HcBuildingElement; PredefinedType:OPTIONAL.IicBuildingFlementProay TypeEnum; WHERE HasObjectName:EXISTS(SELF\HcRont Name); CorrectPredefinedType;NOT(EXISTS(PredefinedType))OR(PredefinedType <>IfeBuildingElement ProxyTypeEnum.USERDEFINED)OR((PredefinedType -IfcBuildingElementProxy TypeEnum USERDEFINED)AND EXISTS (SELF HdOtject.ObjectType)): CorreetTypeAssigned;(SIZEOF(IsTypdBy)-0)OR(IFCSHAREDBI DGEIEMENTS.IFCBUILDLN GELEMENTPROXYTYPE IN TYPEOF(SELF\IcOhjcct.LsTypedBy[1].RelatingType)); ENDLENTITY

续表 B1.2

实体	EXPRESS捕述
代理建筑元素类型 (IfcBuildingElement ProxyType)	ENTTTY IfcBuildingElementProxy Type SUBTYPE OF IkcBuidingElementTyper PredkfinedType:IfcBuildingElementProxy TypeEnum; WHERE CorrectPredefinedType:(PredefinedType <> lfeBuildingElementProxy TypeEnum.USERIEFINED)OR((PredefinedType -IfeBuildingEJementProxy TypeEnum.USERDEFINED)AND EXISTSASELF\HcElement Type.ElementType)); END_ENTITY
建筑系统 (IfeBuildingSystem)	ENTTTY IfkBuildingSystem SUBTYPE OF IfcSystem; PredkfinedType:OPTIONAl.IfeBaildingSystemType Enums END_ENTITY
烟固 (IfeChimney)	ENTITY IfeCHimney SUBTYPE OF IfkBuidingElement; PredkfinedType:OPTIONAL.IfeChimney TrpeEmum; WHERE CorrectProdefinedType;NOT(EXISTS(PrdkfinedType))OR(PredefinedType <>IicChimney TypeEnum USERDEFINED)OR((PredefnedType =IkcChimney Type Enum.USERDEFINED)AND EXISTS(SELF\c0tject,ObjectType)); CorrectTypeAssigned:(SLZROF(IsTypedB;)=0>OR CIFCSHAREDBL DGEIEMENTS IFCCHIMINEYIYPE IN TYPEOF(SEI.F\IfcObjeet.LsTypedBy[1].HelatingType)); END_ENTITY
烟因类型 (HeChimeey Type)	ENTITY IfeChimneyType SUBTYPE OF lfcBuidingElement Type; PredkfinedType,IfeChimney TypeEnumr WHERE CorreetPredefinedType:(PredefinedType<>HeChimaey TypeEnum.USERDEFINED)OR((Predefined Type =IfeChimney TypeEnum.USERDEFINED)AND EXISTS(SELF\IfcElement Type.ElementType)); END_ENTITY
柱 (16=Colsmn)	ENTITY IfeColumn SUPERTYPE OF(IfcClumnStandardCase) SUBTYPE OF KcBuidingElement; PredefinedType:OPTIONAL IfeColumn TypeEnum; WHERE CorrectPredefinedType;NOT(EXISTS(PredefinodType))OR(ProdefinedType <>IeColumn TypeRnum UsKRDEFBKD)OR((PrA.EnedType-IeCdumnTypeEnum USERDEFINED)AND EX ISTS(SELF\feObjecet.ObjecrType)); CoereetTypeAssigred:(SLZPOF(IsTypedB;)=0)OR (CIFCSHAREDBLDGELEMENTS IFCCOLJMNTYTE IN TYPEOF(SEI.F\IfcObjeet.LsTypedBy[1].RelatingType)); END_ENTITY
标准柱 (IfcColumnStandard Case)	ENTTTY IfcColumnStandardCase SUBTYPE OF IkcColumn WHERE HasMaterialProfileSetUsage:SLZEOF(QUERY(temp< • USEDLN(SEIF, IFCKERNEL IFCKELASSOCIATES KELATEUODJECT2?I CIFCFKUUUCTEATENION IFCRELASSOCIATESMATERIAL'IN TYTEOF(temp))AND CIFCMATERLALR ESOURCE IFCMATERIALPROFILESETUSAGE IN TYPEOF(temp RelatingMatera))))-1: END_ENTITY
柱类型 (HeColumnType)	ENTITY IfcColumnType SUBTYPE OF IcBuidingElementType; PredefinedType:IicColumnTypeEnumi WHERE CoerectPredefinedType:(PredefinedType <>HeColumnTypeEnum.USERDEFINED)OR((Predefined Type =IfeColumnTypeEnum.USERDEFINED)AND EXISTS(SELF\IfcElementType.ElementType)): EID_ETITY

续表B.1.2

实体	EXPRESS操述
覆盖物 (HeCovering)	ENTITY IeCovering SUBTYPE OF IfcBuildingElement; PredefinedType:OPTIONAL.HeCoverirg TypeEnum: INVERSE CowemSpaces:SET [0;1]OF fcRelConersSpaces FOR RelatedCoveringsi CoversElements:SET [0,1]OF IfcRelCoversBldzElements FOR RelatedCoverings; WHERE CorreetPredefinedType:NOT(EXISTS(PndefinedType))OR(PredefinedType <>HfeCowering TypeEnum.USERDEFINED)OR((PredefinedType -fcCoveringTypeEnum.USERDEFINED)AND EXISTS(SELF\HcObjcct.ObjeetType)); CarreetTypeAssigned;(SIZEOF(IsTypdBy)=0)OR CIFCSHAREDBLDGELE MENTS.IFCCOVERINGTYPE IN TYTEOF(SEI.F\HcObjeet.IsTypedPy[1].RelatingType)); END_ENTITY
覆盖物类型 (IfeCoveringType)	ENTITY IfcCoveringType SUBTYPE OF IfcBuildingElementType; PredefinedType;HfecCovering TypeEnum; WHERE CorrectPredefinedType;(PredefinedType<>lfeCovering TypeEnum.USERDEFINED)OR((Predefined Type -lfeCoveringTypeEnum.USERDEFINED)AND EXISTS(SEI.F\IfcElcment Type.EcmenrType)), END_ENTITY
幕墙 (lfeCurtainWall)	ENTTTY IfeCurtainWall SUBTYPE OF IfcBuildingElement; PredefinedType:OPTIONAL.eCurtairWallTypeEnum; WHERE CorrextPredefinedType:NOT(EXISTSPMedefiaedType))OR (PredefinedType <>IfeCurtainWallTypeEnum.USERDEFINED)OR((PredefinedType -lfcCartainWall TypeEnum.USERDEFINED)AND EXISTS(SELF\lfcObjcct.ObjextType)); CorreetTypeAssigned;(SIZEOF(IsTypdBy)=0)OR(IFCSHAREDH DGEL EMENTS IFCCURTAINWALLTYPE IN TYPEOF(SEI.F\IfcObject.IsTypedBy[1].RelatingType)); END_ENTITY
幕墙类型 (HeCurtain Wall Type)	ENTTTY HeCurtainWallType SUBTYPE OF fcBuildingElementType; PredefinedType,HfeCurtainWallTypeEnams WHERE CorreetPredefinedType :(PredefinedType>lfeCurtain WallTypeEnun.USERDEFINED)OR ((PredefinndType =HeCurtsin WallTyyEnum.USERDEFINED)AND EXISTS(SELF\IfcElement Type.ElementType)); END_ENTITY
门(lfeDoor)	ENTITY IcDoor SUPERTYPE OF(IfeDooeStandardCase) SUBTYPE OF IfcBuildingEement; OrerallHeight :OPTIONAL.IfcPositiveLengthMeasure; OvenllWidth:OPTIONAL IfcPositivelengthMcasare; PredefinedType,OPTIONAL.IfeDoorTrpEnum, OperationType:OPTIONAL.IfcDcor TypeOperaticnFnum; UserDefinedOperationType :OPTIONAL IleLabel; WHEKE CorreetStyleAssigned;(SIZEOF(LSTypulBy)=0)OR(IFCSHARFDBLDGELEMENTS.IFCDOORTYPE IN TYPEOF(SEI.F\IfeObjeet.LsTypedB[1].RelatingType)); END_ENTITY
标准门 (HeDoorStandardCase)	ENTITY HcDoorStandardCase SUBTYPE OF HeDoor; FNDFNTTTV

续表B1.2

实体	EXPRESS描述
门类型 (lkcDoorType)	ENTITY IfdDoorType SUBTYPE OF IfcBuidingElement Type; PredkfinedType:IfeDoorTypeEnumy OperationType:IfeDoorTypeOperationEnun: ParameterTakesPrecedence:OPTIONAL.BOOLEAN; UserDefinedOperationType;OPIONAL.IkLabel; WHERE CorrectPredefinedType:(PredefinedType <>HeDcorTypeEnum.USERDEFINED)OR((PredeinedType -HeDoorTypeEnum USERDEFINED)AND EXISTS(SELF\IfeElementType.ElementType)); END_ENTITY
线性构件 (fcMember)	ENTITY IfeMember SUPERTYPE OF(IicMemberStandardCase) SUBTYPE OF IfkBuidingElement; PredefinedType:OPTIONAL.IfeMemberTrpeEnum; WHERE CorrectPredefinedType;NOT(EXISTS(PralkfinedType))OR(PredefinedType >IcMember TypeEnum.USERDEFINED)OR((PredefnedType -IfcMemberTypeEnum.USERDEFINED)AND EXISTS(SEIF\IlkObjeet.ObjectType)); CorrectTypeAssigned,(StZEOF(1sTypedB;)=0)OR (IFCSHAREDBLDGELEMENTS IFCMENBERTYPE'IN TYPEOF(SEI F\IfcOhjcet.LsTypedBy[1].RelatirngTvre)) END_ENTITY
标准线性构件 (IfeMemberStandard Case)	ENTITY IkcMemberStandardCase SUBTYPE OF IkeMember; WHERE HasMaterialProfileSetUsage,SIZEOF(QLFRY(temp< USEDINCSELF,IFCKERNEL,IFCRELASXOCIATES RELATEDOBJECTS)I(IFCPRODUCTEXTENSION IFCRELASSOCIATESMATERIAI' IN TYPBOF(temp))AND CIFCMATERIAI RESOURCE.IFCMATERIALPROFILESETUSAGE IN TYPEOF(temp.RelatingMaterial))))=1: END_ENTITY
线性构件类型 (eMemberType)	FNTITY IfeMember T ype SUBTYPE OF IfcBuidingElement Typer PredkfinedType:feMemberTypeEnum; WHERE CorreetPredefinedType :(PredefinedType<>lfeMemberTypeEnum.USERDEFINED)OR《(Predefined Type -IfcMemberTypeEnum.USERDEFINED)AND EXISTS(SELF\HcElement Type.ElementType)); END_ENTITY
平板 (HfcP%ate)	FNTITY IfcPlate SUPERTYPE OF(IfcPlateStandardCase) SUBTYPE OF IkBuidingElement; PrudkfinedType:OPTIONAl.IfePLateTypeEnum; WHFRE CorrectPredefinedType;NOT(EXISTS(ProkfinedType))OR(PredefinedType >MePlate TypeEnum.USERDEFINED)OR((PredefnedType =IfcPlate TypeEnum USERDEFINED)AND EXISTS (SELF\HcObject.ObjectType)); CorreerTypeAssigred :(SLZPOF(IsTypedB,)=0)OR 'IFCSHAREDBLDGELEMENTS.IFCPLAIETYTE LN TYPEOF(SELF\lfcObjeet.LsTypedBy[1].RelstirgType)); END ENTITY
标准平板 (IfcPlateSandardCase)	ENTTTY IfcPlateStandardCse SUBTYPE OF IkPlate; WHERE HasMateriallayerSetUsage;SLZDOF(QUERY(temp< USEDIN(SELF,IFCKERNEL.IFCRELASSOCIATES RELATEDOBJECTS)I(IFCPRODUCTEXTEN SION.IFCRELASSOCIATESMATERIAL'IN TYPEOF(temp))AND ("IFCMATERLAL. RESOURCE.IFCMATERIALLAYERSETLSAGE IN TYPEOF(tump.RelatingMateria))))=1: PHD_RKTITY